



**CHEVRON U.S.A. PRODUCTS  
COMPANY**

**RICHMOND REFINERY  
& LONG WHARF**

**SPILL PREPAREDNESS AND  
EMERGENCY RESPONSE PLAN**

**841 Chevron Way  
Richmond, California 94802**

**USCG Ref. No.: SF000300  
EPA Ref. No.: FRP09A0192  
CA OSPR Ref. No.: F2-07-0120  
Certificate of Financial Responsibility No.: 2-0052-00-001**

**Revision 28  
March 2016**



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March 15, 2016

United States Coast Guard  
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Subject: Revision No. 28—Spill Preparedness and Emergency Response Plan, FIN # SF000300

As required under Federal regulations 33 CFR 154.1065(a), we have conducted our 5 year plan review and update of the Chevron Richmond Refinery and Richmond Long Wharf *Spill Preparedness and Emergency Response Plan* (Plan).

The revisions (noted in the Revision Log) include updates to the notifications section, Qualified Individual list, equipment lists, and facility response team members. The rest are mostly ministerial or added to provide greater clarity on response actions and have not significantly changed our operation, preparedness or response. A detailed listing of our revisions has been included. The plan updates are also available electronically if so requested.

If you have questions or concerns regarding the enclosed revisions, please contact me at your convenience. Thank you.

Yours truly,

A handwritten signature in black ink, appearing to read "JDT", with a long horizontal stroke extending to the right.

James D. Tydingco

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## **Spill Preparedness and Emergency Response Plan**

### **Chevron Products Company**

#### **Management Approval and Response Effort Authorization**

This Plan has been reviewed for its feasibility of execution pursuant to Title 33, Code of Federal Regulations, Section 154.1060(b) [33 CFR 154.1060(b)] and Title 14 California Code of Regulations, Section 817.02(a)(1)(D) [14 CCR 817.02(a)(1)(D)]. The plan meets the requirements of 33 CFR Subpart F and 14 CCR 817.02 and is approved for implementation as herein described.

I certify, to the best of my knowledge and belief, under penalty of perjury under the laws of the United States of America and the State of California, that the information contained in this contingency plan is true and correct and that the plan is both feasible and executable.



Mark Ayers

Date: March 15, 2016

Manager, Emergency Services Division  
Chevron Products Company  
Richmond, California

<b>Change Number</b>	<b>Effective Date</b>	<b>Date Entered</b>	<b>Affected Sections</b>	<b>Person Entering Change</b>
1	8/16/93	----	----	LM Williams
2	2/28/94	----	----	LM Williams
3	4/1/94	----	----	LM Williams
4	5/25/94	----	----	LM Williams
5	7/20/94	----	----	SS Moore
6	12/12/94	----	----	SS Moore
7	1/5/96	----	----	SS Moore
8	3/22/96	----	----	SS Moore
9	1/15/97	----	----	R Miller
10	1/15/98	----	----	FM Rullan
11	August 1998	----	General Update and Revision to OSPR Regs. (Sect. TOC, 100, 200, 300, 400, 500, App. A, B,& C)	FM Rullan
12	July 1999	----	General Update (Sect. TOC, 100, 200, 300, 400, 500, 600, App. A through K)	FM Rullan
13	December 2000	----	General Update (TOC, Sect. 100, 201, 203, Appendix A, C, J, K)	FM Rullan
14	January 2002	----	General Update (Sections 100, 201, 204, 205, 207, 400, Appendix A, Appendix C, Appendix J)	FM Rullan
15	January 2003		General Update (Section 200 Fig. 203-2; Appendix J, Listing of Qualified Individuals; Appendix A, "Quarry Tank Field Drainage Systems" dwg.	R Miller

16	March 2003		General Update: Appendix A, updated tank and line lists, replaced various topo. maps with all-inclusive map.	R Miller
17	January 2004		General Update of Section 200 to reflect changes to Plan post-MSRC/Clean Bay merger; updated list of QI's	R Miller
18	April 2005		<p>5-Year USCG update.</p> <ul style="list-style-type: none"> <li>• Changes to reflect the MSRC/Clean Bay merger throughout Sections 200 thru 600;</li> <li>• Section 100-Replaced contact information for Agent for Service of Process;</li> <li>• Section 201-revised and updated contact phone numbers and Company names;</li> <li>• Section 204- removed references to Clean Bay RRM and replaced with appropriate references to ACP; specified changes to fire equipment in 204.7;</li> <li>• Section 205-Removed Clean Bay references, replacing w/ appropriate MSRC cites;</li> <li>• Section 206-revised GRP 4/5 Site Index;</li> <li>• Section 600-Specified a detailed instruction sheet to accompany each Revision Package sent to plan-holders;</li> <li>• Appendix A- Updated Refinery Tank info; included reference to Seismic Retrofit and Electrical Upgrade;</li> </ul>	R Miller

			<ul style="list-style-type: none"> <li>• Appendix B-Updates to List of Contacts;</li> <li>• Appendix C Updated Equipment lists for MSRC;</li> <li>• Appendix D-Updated Communications procedure &amp; available equipment;</li> <li>• Appendix I-Included MOU w/ ChevronTexaco Shipping and ChevronTexaco Pipeline;</li> <li>• Appendix J-Updated QI lists</li> </ul>	
19	February 2006		General Update: Tab 200 update personnel lists, callout numbers and contractors; Tab 300 update spill history; Appendix C update equipment list; Appendix J update list of QI's	RMiller
20	February 2007		General Update: Replace Table of Contents; Replace Fig. 203-2 in Section 203; Appendix A revise Facility-Specific Information as requested by OSPR, including more-detailed facility maps; Appendix J update list of QI's,	R. Miller

21	March 2008	April 2008	5-year OSPR update: <ul style="list-style-type: none"> <li>Standardized plan name to Spill Preparedness and Emergency Response Plan in all Sections &amp; Appendices</li> <li>Changed title of the Refinery Shift Coordinator to Refinery Shift Leader in all Sections &amp; Appendices.</li> <li>Changed title of Plant Protection to Chevron Fire Department in all Sections &amp; Appendices.</li> <li>Replaced references to Clean Bay with Marine Spill Response Corporation (MSRC)</li> <li>Cross-reference table removed Clean Bay Regional Resources Manual reference.</li> <li>Section 101 – Plan responsibility changed from Blending and Shipping to Emergency Services Division</li> <li>Section 104.3 – Removed Refinery Shift Coordinator (Leader) as a QI and added Oil Spill Incident Commander On-Call)</li> <li>Section 104.4 – Remove reference to OSPR cross reference table in Table of Contents information located in Appendix A.</li> <li>Section 200 – Renamed Section 206 to Environmental Sensitive</li> </ul>	V. Blalack
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			<p>Sites.</p> <ul style="list-style-type: none"> <li>Figure 201-1 – Changed name to Oil Spill Emergency Information Form from Discharge Information Form. Renumbered paragraphs for consistency. Added more weather information in Section C.</li> </ul>	
21	March 2008	April 2008	<ul style="list-style-type: none"> <li>Figure 201-2 – Removed Refinery Shift Coordinator (Leader) and added Oil Spill Incident Commanders and acting Battalion Chiefs as Qualified Individuals.</li> <li>Corrected MSRC’s number and added local MSRC contact number.</li> <li>Figure 201.7 – Added spill notification requirements under DFG/OSPR.</li> <li>Section 203.2 – Added the refinery’s cafeteria as a tertiary command post available within 12 hours.</li> <li>Figure 203-2 – Updated Spill Management Team positions and names.</li> <li>Section 204.1 – Corrected references to reflect updated ACP sections.</li> <li>Section 204.2.5 –</li> </ul>	V. Blalack

21	March 2008	April 2008	<p>Removed reference to the Clean Bay RRM, manual no longer exists. Add spill volume estimator as Figure 204-1.</p> <ul style="list-style-type: none"> <li>• Section 204.4 – Removed reference for volunteers to contact IBRRC and added OSPR in its place.</li> <li>• Section 204.6 – Added reference to the refinery’s on-site medical clinic.</li> <li>• Figure 204-1 – Added an oil spill volume estimator.</li> <li>• Section 205.2 Corrected amount of boom to be deployed to 700 &amp; 1400 versus 600 &amp; 1000.</li> <li>• Section 205.3.5 – Removed references of lists of suppliers of services in the ACP and added they can be found in local phone directories and on internet web pages.</li> <li>• Section 206 – Renamed Environmental Sensitive Sites/Resources at Risk.</li> <li>• GRP 4/5 Site Index</li> </ul>	V. Blalack
21	March 2008	April 2008	<p>Response Action – Corrected Site ID SF-456, 457, 458 to reflect updated ACP nomenclature (SF-480, 490, 495)</p> <ul style="list-style-type: none"> <li>• ACP Sensitive Site Resource List – GRP 4 -</li> </ul>	V. Blalack

21		April 2008	<p>Corrected Site ID SF-456, 457, 458 to reflect updated ACP nomenclature (SF-480,490,495)</p> <ul style="list-style-type: none"> <li>• Section 207 - Corrected references to reflect updated ACP sections.</li> <li>• Figure 302-1 – Updated Spill History information.</li> <li>• Section 401.4 – Changed largest tank volume (T-3106) to total capacity (740,292 bbls) to reflect EPA WCD planning volume.</li> <li>• Section 402.3 – Updated name change from B-Basin to No. 9 Basin.</li> <li>• Section 403.2 - Corrected references to reflect updated ACP sections.</li> <li>• Table 500 – Updated names for HAZWOPER training requirements to reflect current regulations.</li> <li>• Table 500 – Added ICS training requirements for Oil Spill Response/Spill Management Team.</li> <li>• Section 502.1(B) – Added emergency procedures and spill management team for unannounced drills.</li> <li>• Section 502.1(C) – Added emergency procedures.</li> </ul>	V. Blalack
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21	<p>March 2008</p> <p>March 2008</p>	April 2008	<ul style="list-style-type: none"> <li>• Section 502.1(E) – Added reasonable worst case scenario exercise on a triennial basis.</li> <li>• Section 600 – Changed SPERP responsibilities to Manger, Emergency Services Division to reflect new organization.</li> <li>• Appendix B-1 – Corrected references to reflect updated ACP sections.</li> <li>• Appendix B-1 – Updated contact information.</li> <li>• Appendix B-3 – Updated local lodging information.</li> <li>• Appendix C-1 – Added reference to MSRC’s web page for resource information.</li> <li>• Appendix C-2 – Updated amount of boom carried on spill response boats to 700 ft.</li> <li>• Table C-1 – Changed equipment location’s name to the Oil Spill Response Center.</li> <li>• Table C-2 – Removed Clean Bay’s resource list and added MSRC’s California Region Major Equipment List.</li> <li>• Appendix D-1 – Removed reference to using Nextel Direct Connect and added cell phone.</li> <li>• Appendix D-1 – Added</li> </ul>	
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21	March 2008	April 2008	portable MSRC radios are available in the Oil Spill Response Center.	V. Blalack
			<ul style="list-style-type: none"> <li>• Appendix D-3 – Added availability of Chevron’s Rapid Deployment Communications System and how requested. Also added reference to MSRC’s portable communications trailer.</li> <li>• Appendix J – Added acting Battalion Chief to the list of QIs. Removed Refinery Shift Coordinators (Leaders) as QIs. Updated names of Oil Spill ICs (on-call).</li> <li>• Appendix H-1 – Added availability of trajectory modeling with Chevron’s Environmental Functional Team activation. Also availability of local consultants/contractor using OilMap trajectory software.</li> <li>• Appendix H-1- Added SF PORTS information for environmental monitoring.</li> <li>• Appendix H-3 – Added wind and current effect information.</li> <li>• Appendix F – Updated list of acronyms and abbreviations.</li> </ul>	V. Blalack
22	February 2009	March 2009	<ul style="list-style-type: none"> <li>• Table of Contents – corrected pagination of Sections 202 &amp; 203.</li> </ul>	V. Blalack

			<ul style="list-style-type: none"> <li>• Figure 201-3 – updated contact information.</li> <li>• Figure 201-4 – updated contact information.</li> <li>• Figure 201-5 – updated contact information.</li> <li>• Sections 202 &amp; 203 – corrected pagination separating Sec 202 &amp; 203.</li> <li>• Table 500 – added Qualified Individual training requirement and correct nomenclature.</li> <li>• Table 600-1 corrected agencies addresses.</li> <li>• Appendix B-1, page B-3, updated agencies contact information.</li> </ul>	
23	March 2010	April 2010	<ul style="list-style-type: none"> <li>• New Cover Page</li> <li>• Figure 201-2, corrected MSRC phone number.</li> <li>• Figure 201-4, included SLC to mandatory notification list.</li> <li>• Figure 201-7, included SLC reporting requirements.</li> <li>• Figure 203-2, updated Spill Response Team roster.</li> <li>• Section 206, page 200-33, included language required by SLC iaw RLW lease mitigation measures.</li> <li>• Figure 400-2, removed #3Gas line from Total Line Drainage table; had</li> </ul>	V. Blalack

23	March 2010	April 2010	<p>negligible effect on overall calculations.</p> <ul style="list-style-type: none"> <li>• Figure 400-4, removed 1 of # 4 F/O amount in Total Line Drainage table; was a duplicate and did not affect over all calculations.</li> <li>• Figure 302-1, updated Long Wharf spill history.</li> <li>• Table 60-1, corrected State Lands Commission's Long Beach office address.</li> <li>• Table B-1, updated Cal EMA notification info.</li> <li>• Appendix C, para C-2, updated containment equipment.</li> <li>• Table C-1, updated spill response equipment: removed White Boat and added Orange Boat.</li> <li>• Appendix J, page J-3, updated QI list.</li> </ul>	V. Blalack
24	May 2011	May 2011	<p>5 year USCG Update:</p> <ul style="list-style-type: none"> <li>• New Cover Page</li> <li>• Updated Cover Letter</li> <li>• Updated TOC and page numbering</li> <li>• Updated Management Approval Letter</li> <li>• Updated 33 CFR 154 Regulatory Cross Index</li> <li>• Included USCG interim 5 year plan approval letter</li> <li>• Updated USCG revision</li> </ul>	M. Johnson

			<p>approval letter</p> <ul style="list-style-type: none"> <li>• Updated DFG/OPR Contingency Plan Verification Letter</li> <li>• Updated MSRC and CVX Corp. NPREP letters</li> <li>• Section 100, updated title of facility contact for correspondence and QI section</li> <li>• Figure 201-4, updated agency contact information to mirror RI 410 updates from Contra Costa County 2010 audit</li> <li>• Figure 201-5, updated phone numbers for MSRC home office, Dutra, and CA Oiled Wildlife Care Network</li> <li>• Figure 201-6, updated consultant contact information</li> <li>• Section 203-2, updated language to include the EOC as a command post</li> <li>• Figure 203-2, updated Spill Response Team Roster and position assignments</li> <li>• Section 204, updated Fire Equipment section to account for MOTEMS firewater upgrades</li> <li>• Section 205, added section 205.3.7 for WCD incident management</li> <li>• Section 206, updated text to include required language for CSLC</li> </ul>	
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			<p>Lease Mitigation Measures</p> <ul style="list-style-type: none"> <li>• Section 200, updated pagination</li> <li>• Section 300, updated spill history and pagination</li> <li>• Section 400, updated appendix reference in section 403</li> <li>• Section 600, updated table 600-1 for response plan distribution contacts</li> <li>• Appendix A, updated section A-15 for clarity</li> <li>• Appendix B, updated phone numbers</li> <li>• Appendix C, Updated Equipment Lists for the RLW, MSRC, and added MSRC Aerial Tracking Assets</li> <li>• Appendix E, added clarifying language for site Safety and Health Plan development, distribution, and integration into response actions</li> <li>• Appendix F, updated acronyms</li> <li>• Appendix I, provided latest copy of MSRC Execution Agreement</li> <li>• Appendix J, Updated QI list</li> </ul>	
24	May 2012	May 2012	<ul style="list-style-type: none"> <li>• Updated Cover Letter</li> <li>• Updated TOC and page numbering</li> </ul>	M. Johnson

			<ul style="list-style-type: none"> <li>• Updated Management Approval Letter</li> <li>• Updated DFG_OSPR annual Contingency Plan Review Confirmation letter dated July 2011.</li> <li>• Replaced MSRC and Corporate Emergency Response NPREP letters</li> <li>• Updated California Certificate of Financial Responsibility (CA COFR)</li> <li>• Figure 203-2, updated Spill Response Team Roster and position assignments</li> <li>• Section 300, updated spill history and pagination</li> <li>• Appendix C, Updated MSRC Equipment List</li> <li>• Appendix J, Updated QI list</li> </ul>	
25	May 2013	May 2013	<ul style="list-style-type: none"> <li>• Plan reviewed. No updates or changes required.</li> </ul>	J.D. Tydingco
26	Sept 2014 Oct 2014	Nov 2014	<ul style="list-style-type: none"> <li>• Appendix C revision</li> <li>• Appendix J, Updated QI list</li> <li>• Section 206.2.4 revision</li> </ul>	J.D. Tydingco
27	March 2015 Nov 2015	Nov 2015	<ul style="list-style-type: none"> <li>• Figure 201-4, updated agency contact information to mirror RI 410 updates.</li> <li>• Figure 203-2, updated</li> </ul>	J.D. Tydingco

28	March 2016	May 2016	5 year USCG Update: <ul style="list-style-type: none"> <li>• New Cover Page</li> <li>• Updated Cover Letter</li> <li>• Updated TOC and page numbering</li> <li>• Updated Management Approval Letter</li> <li>• Included USCG interim 5 year plan approval letter</li> <li>• Updated USCG revision approval letter</li> <li>• Updated DFW/OSPR Contingency Plan Verification Letter</li> <li>• Updated MSRC and CVX Corp. NPREP letters</li> <li>• Section 100, updated contact for Agent for Service of Process.</li> <li>• Figure 201-1, updated to change name of MSDS to SDS.</li> <li>• Figure 201-4, updated to change name of MSDS to SDS.</li> <li>• Figure 203-2, updated Spill Response Team Roster and position assignments</li> <li>• Section 204.8, created to reference Response Strategy for zones defined in 204-1 and pagination.</li> </ul>	
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			<ul style="list-style-type: none"> <li>• Section 300, updated 302-1 Spill history</li> <li>• Section 304.5, updated hyperlink to the California Wildlife Response Plan and pagination</li> <li>• Section 400, updated pagination</li> <li>• Section 500, 502.1 and 502.2 updated requirements for Equipment deployment drills.</li> <li>• Section 502.5, updated hyperlinks and examples for Drills and Exercise Forms</li> <li>• Section 600, updated table 600-1 for response plan distribution contacts</li> <li>• Appendix A, updated section A-1.5 for clarity and pagination</li> <li>• Appendix B, updated pagination</li> <li>• Appendix C, updated pagination</li> <li>• Appendix E, updated pagination</li> <li>• Appendix F, updated pagination</li> <li>• Appendix J, Updated QI list</li> </ul>	
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## **Regulatory Cross Indices**

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Cross-references to the individual agency regulations are provided in the following tables.

Table A	USCG 33 CFR §154
Table B	EPA 40 CFR §112
Table C	Title 14 CAC §817.02.

**Table A. Cross Index to U.S. Coast Guard Facility Response Plan Requirements.**

USCG 33 CFR 154.1035 <sup>a)</sup>		<u>Location in this Plan</u>
(a)	(a)(1)-(3) Introduction and Plan Content (a)(4) Table of Contents (a)(5) Cross-Index (a)(6) Record of Changes	Sec. 100 TOC – i xvi ii
(b)	Emergency Response Action Plan (1) Notification Procedures (2)(i) Spill Mitigation (2)(ii) Spill Mitigation (2)(iii) Spill Mitigation (3)(i) Facility's response activities (3)(ii) QI Responsibility and Authority (3)(iii) Spill Management Personnel (3)(iv)(A) Equipment Lists (3)(iv)(B) OSRO (3)(v) SMT Job Descriptions (4) Sensitive areas (5) Disposal Plan	Sec. 200 Sec. 201 Sec. 400 Sec. 202 400-4 100-3, 204, 205 100-3 203 Appendix C Appendix I Sec 203 Sec. 206 Sec. 207
(c)	Training and Exercises	Sec. 500
(d)	Plan Review and Update Procedures	Sec. 600
(e)	Appendices (1) Facility-specific information (2) List of contacts (3) Equipment lists and records (4) Communications plan (5) Site-specific safety and health plan (6) List of acronyms and definitions	Appendix A Appendix B Appendix C Appendix D Appendix E Appendix F

<sup>a)</sup> Final Rule 33 CFR 154

**Table B. Cross Index to EPA 40 CFR 112.**

<u>EPA 40 CFR 112</u>		<u>Location in this Plan</u>
1.0	Standard Facility Specific Response Plan	
1.1	Emergency Response Action Plan	201 – 207
1.1.1	Emergency Response Coordinator Information	104, 201
1.1.2	Emergency Notification Phone List	201
1.1.3	Spill Response Notification Form	201
1.1.4	Equipment List and Location	205, Appendix C
1.1.5	Facility Response Team	203
1.1.6	Evacuation Plan	Appendix K
1.1.7	Immediate Actions	204
1.1.8	Facility Diagrams	Appendix A
1.2	Facility Information	Appendix A
1.3	Emergency Response Information	104
1.3.1	Notification	201
1.3.2	Equipment	205, Appendix C
1.3.3	Personnel	203
1.3.4	Evacuation Plans	Appendix K
1.3.5	Coordinator's Duties	104, 201, 203
1.4	Hazard Evaluation	301
1.4.1	Hazard Identification	301
1.4.2	Vulnerability Analysis	303
1.4.3	Analyzing the Potential for a Spill	301
1.4.4	Spill History	302

**Table B. Cross Index to EPA 40 CFR 112 (continued).**

<u>EPA 40 CFR 112</u>		<u>Location in this Plan</u>
1.5	Discharge Scenarios	402
1.5.1	Small and Medium Discharge	402
1.5.2	Worst Case Discharge	402
1.6	Discharge Detection Systems	Appendix A
1.6.1	Discharge Detection by Personnel	Appendix A
1.6.2	Automated Discharge Detection	Appendix A
1.7	Plan Implementation	100
1.7.1	Disposal Plans	270
1.7.2	Containment and Drainage Planning	Appendix A
1.8	Self-Inspection, Training, and Meeting Logs	500, Appendix A
1.8.1	Facility Self-Inspection	Appendix A
1.8.1.1	Tank Inspection	Appendix A
1.8.1.2	Response Equipment Inspection	Appendix A
1.8.1.3	Secondary Containment Inspection	Appendix A
1.8.2	Mock Alert Drills	502
1.8.2.1	Mock Alert Drill Logs	502
1.8.3	Training and Meeting Logs	501
1.8.3.1	Personnel Training Logs	501
1.8.3.2	Discharge Prevention Meetings Log	501
1.9	Diagrams	100, Appendix A
1.10	Security	204
2.0	Response Plan Cover Sheet	Table of Contents
3.0	Definitions	Appendix F
4.0	Acronyms	Appendix F

## EPA Response Plan Coversheet and Information

General Information	
Owner / Operator of Facility:	Chevron Products Company
Facility Name:	Chevron Richmond Refinery
Facility Address:	841 Chevron Way, Richmond, CA 94802-0627
Facility Phone Number:	(510) 242-2772 (Refinery Shift Leader)
Latitude and Longitude:	37 55' 24" North/ 122 24' 39" West
Dun and Bradstreet Number:	009141559
Standard Industrial Classification (SIC) Code:	2911
Largest Oil Storage Tank Capacity:	740,929 bbls (T-3106)
Maximum Oil Storage Capacity:	10,296,122 bbls.
Number of Oil Storage Tanks:	55
Worst Case Discharge Amount:	681,157 bbls.
Facility Distance to Navigable Waters:	Less than 3 nautical mile

<i>Applicability of Substantial Harm Criteria</i>	
Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?	YES
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?	NO
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?	YES
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?	NO
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?	NO

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## EPA Response Plan Coversheet and Information – Continued

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### CHEVRON RICHMOND REFINERY

#### EPA CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.



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Signature

Mark Ayers

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Name

Chief, Emergency Services Division

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Title

May 15, 2011

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Date

**Table C. Cross Index to California Office of Oil Spill Prevention and Response Requirements**

<u>Title 14 CCR 817.02</u>		<u>Location in this Plan</u>
(a)	Introductory material (1) Facility Information/ Certification Statement/ COFR (2) Qualified Individual (3) Name, address, etc. for agent for service of process (4) Copy of written contract with spill response organization	100  104, 201, Appendix A  104  Appendix C
(b)	Facility description (1) Design and operation (2) Facility site and surrounding area  (3) Pipeline, hose, arm, & PRD maintenance and testing info; Automatic controls; leak detection & spill safety/alarm system devices equipment and procedures	Appendix A
(c)	Prevention measures (1) Risk and hazard analysis Spill History/ Hazard Analysis (2) Off-site consequence analysis (A) 72 hr trajectory" analysis (B) Discussion of toxic effects (3) Listing of potentially affected sensitive resources (4) Required prevention measures (5) Other leak prevention measures	301  302    206  Appendix A
(d)	On-water containment and recovery (1) Reasonable worst case spill (RWCS) (2) Persistence and emulsification factors (3) Response capability standards (4) Non-cascadable equipment (5) On-water response equipment and services (6) On-water response and recovery strategies	400  400  400 205 205  204



(e)	Shoreline Protection and Cleanup	
	(1) Shoreline response planning volumes	400
	(2) Shoreline response equipment and services	205
	(3) [Reserved]	
	(4) Shoreline response and cleanup strategies	204

**Table C . Cross Index to  
California Office of Oil Spill Prevention and Response Requirements (continued).**

<u>Title 14 CCR 817.02</u>		<u>Location in this Plan</u>
(f)	Response procedures (1) Organization of facility response system and management team (ICS) (2) Procedures for establishing command sites (3) Checklist/flow chart/decision tree describing stages of cleanup (4) Provision for Initial emergency services (5) Methods/equipment to minimize spill (6) Methods, equipment, and lines of communication (7) Post spill review (including methods for review) (8) Means to establish exclusion, Decon, & Safe Zones  (9) Site Safety Plan	203 203, 204 204 202, 204 202 Appendix D  204 Appendix E  Appendix E
(g)	Notification procedures (1) List of contacts (2) Procedure for immediate notification (3) Call-out procedure (resources) (4) Notification Checklist  (5) Report not delayed for information (6) Spill Update Reporting	201, Appendix B 201 201 201  201 201
(h)	Temporary waste storage (1) ID sufficient temporary waste storage (2) ID party to maintain recovered oil and oily waste (3) ID site criteria for selecting temporary storage sites (4) Permits required (5) Methods to expedite state process for permitting	207 207  207 207 207
(i)	Wildlife rehabilitation requirements (1) Use of CA OWCN (2) or Description of procedures & resources under contract	201, 304

**Table C . Cross Index to  
California Office of Oil Spill Prevention and Response Requirements (continued).**

<u>Title 14 CCR 817.02</u>		<u>Location in this Plan</u>
(j)	Training (1) Response Equip training (2) Operational risk reduction training (3) Safety training (4) Training Records	501 501 501 501
(k)	Drills and Exercise  (1) Exercise of all plan elements (Exercise of Offsite Consequence Analysis Sites) - Notification Drill - Response Equipment Drill - Table Top Exercise (2) Training Substitution  (3) Response Resource Drills  (4) Drill Components  (5) Drill Records	502  502 502 502 502 502  502  502  502

## **Spill Preparedness and Emergency Response Plan**

### **Chevron Products Company**

#### **Management Approval and Response Effort Authorization**

This Plan has been reviewed for its feasibility of execution pursuant to Title 33, Code of Federal Regulations, Section 154.1060(b) [33 CFR 154.1060(b)] and Title 14 California Code of Regulations, Section 817.02(a)(1)(D) [14 CCR 817.02(a)(1)(D)]. The plan meets the requirements of 33 CFR Subpart F and 14 CCR 817.02 and is approved for implementation as herein described.

I certify, to the best of my knowledge and belief, under penalty of perjury under the laws of the United States of America and the State of California, that the information contained in this contingency plan is true and correct and that the plan is both feasible and executable.



Mark Ayers

Date: March 15, 2016

Manager, Emergency Services Division  
Chevron Products Company  
Richmond, California

<b>Change Number</b>	<b>Effective Date</b>	<b>Date Entered</b>	<b>Affected Sections</b>	<b>Person Entering Change</b>
1	8/16/93	----	----	LM Williams
2	2/28/94	----	----	LM Williams
3	4/1/94	----	----	LM Williams
4	5/25/94	----	----	LM Williams
5	7/20/94	----	----	SS Moore
6	12/12/94	----	----	SS Moore
7	1/5/96	----	----	SS Moore
8	3/22/96	----	----	SS Moore
9	1/15/97	----	----	R Miller
10	1/15/98	----	----	FM Rullan
11	August 1998	----	General Update and Revision to OSPR Regs. (Sect. TOC, 100, 200, 300, 400, 500, App. A, B,& C)	FM Rullan
12	July 1999	----	General Update (Sect. TOC, 100, 200, 300, 400, 500, 600, App. A through K)	FM Rullan
13	December 2000	----	General Update (TOC, Sect. 100, 201, 203, Appendix A, C, J, K)	FM Rullan
14	January 2002	----	General Update (Sections 100, 201, 204, 205, 207, 400, Appendix A, Appendix C, Appendix J)	FM Rullan
15	January 2003		General Update (Section 200 Fig. 203-2; Appendix J, Listing of Qualified Individuals; Appendix A, "Quarry Tank Field Drainage Systems" dwg.	R Miller

16	March 2003		General Update: Appendix A, updated tank and line lists, replaced various topo. maps with all-inclusive map.	R Miller
17	January 2004		General Update of Section 200 to reflect changes to Plan post-MSRC/Clean Bay merger; updated list of QI's	R Miller
18	April 2005		<p>5-Year USCG update.</p> <ul style="list-style-type: none"> <li>• Changes to reflect the MSRC/Clean Bay merger throughout Sections 200 thru 600;</li> <li>• Section 100-Replaced contact information for Agent for Service of Process;</li> <li>• Section 201-revised and updated contact phone numbers and Company names;</li> <li>• Section 204- removed references to Clean Bay RRM and replaced with appropriate references to ACP; specified changes to fire equipment in 204.7;</li> <li>• Section 205-Removed Clean Bay references, replacing w/ appropriate MSRC cites;</li> <li>• Section 206-revised GRP 4/5 Site Index;</li> <li>• Section 600-Specified a detailed instruction sheet to accompany each Revision Package sent to plan-holders;</li> <li>• Appendix A- Updated Refinery Tank info; included reference to Seismic Retrofit and Electrical Upgrade;</li> </ul>	R Miller

			<ul style="list-style-type: none"> <li>• Appendix B-Updates to List of Contacts;</li> <li>• Appendix C Updated Equipment lists for MSRC;</li> <li>• Appendix D-Updated Communications procedure &amp; available equipment;</li> <li>• Appendix I-Included MOU w/ ChevronTexaco Shipping and ChevronTexaco Pipeline;</li> <li>• Appendix J-Updated QI lists</li> </ul>	
19	February 2006		General Update: Tab 200 update personnel lists, callout numbers and contractors; Tab 300 update spill history; Appendix C update equipment list; Appendix J update list of QI's	RMiller
20	February 2007		General Update: Replace Table of Contents; Replace Fig. 203-2 in Section 203; Appendix A revise Facility-Specific Information as requested by OSPR, including more-detailed facility maps; Appendix J update list of QI's,	R. Miller

21	March 2008	April 2008	5-year OSPR update: <ul style="list-style-type: none"> <li>Standardized plan name to Spill Preparedness and Emergency Response Plan in all Sections &amp; Appendices</li> <li>Changed title of the Refinery Shift Coordinator to Refinery Shift Leader in all Sections &amp; Appendices.</li> <li>Changed title of Plant Protection to Chevron Fire Department in all Sections &amp; Appendices.</li> <li>Replaced references to Clean Bay with Marine Spill Response Corporation (MSRC)</li> <li>Cross-reference table removed Clean Bay Regional Resources Manual reference.</li> <li>Section 101 – Plan responsibility changed from Blending and Shipping to Emergency Services Division</li> <li>Section 104.3 – Removed Refinery Shift Coordinator (Leader) as a QI and added Oil Spill Incident Commander On-Call)</li> <li>Section 104.4 – Remove reference to OSPR cross reference table in Table of Contents information located in Appendix A.</li> <li>Section 200 – Renamed Section 206 to Environmental Sensitive</li> </ul>	V. Blalack
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			<p>Sites.</p> <ul style="list-style-type: none"> <li>Figure 201-1 – Changed name to Oil Spill Emergency Information Form from Discharge Information Form. Renumbered paragraphs for consistency. Added more weather information in Section C.</li> </ul>	
21	March 2008	April 2008	<ul style="list-style-type: none"> <li>Figure 201-2 – Removed Refinery Shift Coordinator (Leader) and added Oil Spill Incident Commanders and acting Battalion Chiefs as Qualified Individuals.</li> <li>Corrected MSRC’s number and added local MSRC contact number.</li> <li>Figure 201.7 – Added spill notification requirements under DFG/OSPR.</li> <li>Section 203.2 – Added the refinery’s cafeteria as a tertiary command post available within 12 hours.</li> <li>Figure 203-2 – Updated Spill Management Team positions and names.</li> <li>Section 204.1 – Corrected references to reflect updated ACP sections.</li> <li>Section 204.2.5 –</li> </ul>	V. Blalack

21	March 2008	April 2008	<p>Removed reference to the Clean Bay RRM, manual no longer exists. Add spill volume estimator as Figure 204-1.</p> <ul style="list-style-type: none"> <li>• Section 204.4 – Removed reference for volunteers to contact IBRRC and added OSPR in its place.</li> <li>• Section 204.6 – Added reference to the refinery’s on-site medical clinic.</li> <li>• Figure 204-1 – Added an oil spill volume estimator.</li> <li>• Section 205.2 Corrected amount of boom to be deployed to 700 &amp; 1400 versus 600 &amp; 1000.</li> <li>• Section 205.3.5 – Removed references of lists of suppliers of services in the ACP and added they can be found in local phone directories and on internet web pages.</li> <li>• Section 206 – Renamed Environmental Sensitive Sites/Resources at Risk.</li> <li>• GRP 4/5 Site Index</li> </ul>	V. Blalack
21	March 2008	April 2008	<p>Response Action – Corrected Site ID SF-456, 457, 458 to reflect updated ACP nomenclature (SF-480, 490, 495)</p> <ul style="list-style-type: none"> <li>• ACP Sensitive Site Resource List – GRP 4 -</li> </ul>	V. Blalack

21		April 2008	<p>Corrected Site ID SF-456, 457, 458 to reflect updated ACP nomenclature (SF-480,490,495)</p> <ul style="list-style-type: none"> <li>• Section 207 - Corrected references to reflect updated ACP sections.</li> <li>• Figure 302-1 – Updated Spill History information.</li> <li>• Section 401.4 – Changed largest tank volume (T-3106) to total capacity (740,292 bbls) to reflect EPA WCD planning volume.</li> <li>• Section 402.3 – Updated name change from B-Basin to No. 9 Basin.</li> <li>• Section 403.2 - Corrected references to reflect updated ACP sections.</li> <li>• Table 500 – Updated names for HAZWOPER training requirements to reflect current regulations.</li> <li>• Table 500 – Added ICS training requirements for Oil Spill Response/Spill Management Team.</li> <li>• Section 502.1(B) – Added emergency procedures and spill management team for unannounced drills.</li> <li>• Section 502.1(C) – Added emergency procedures.</li> </ul>	V. Blalack
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21	<p>March 2008</p> <p>March 2008</p>	April 2008	<ul style="list-style-type: none"> <li>• Section 502.1(E) – Added reasonable worst case scenario exercise on a triennial basis.</li> <li>• Section 600 – Changed SPERP responsibilities to Manger, Emergency Services Division to reflect new organization.</li> <li>• Appendix B-1 – Corrected references to reflect updated ACP sections.</li> <li>• Appendix B-1 – Updated contact information.</li> <li>• Appendix B-3 – Updated local lodging information.</li> <li>• Appendix C-1 – Added reference to MSRC’s web page for resource information.</li> <li>• Appendix C-2 – Updated amount of boom carried on spill response boats to 700 ft.</li> <li>• Table C-1 – Changed equipment location’s name to the Oil Spill Response Center.</li> <li>• Table C-2 – Removed Clean Bay’s resource list and added MSRC’s California Region Major Equipment List.</li> <li>• Appendix D-1 – Removed reference to using Nextel Direct Connect and added cell phone.</li> <li>• Appendix D-1 – Added</li> </ul>	
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21	March 2008	April 2008	portable MSRC radios are available in the Oil Spill Response Center.	V. Blalack
			<ul style="list-style-type: none"> <li>• Appendix D-3 – Added availability of Chevron’s Rapid Deployment Communications System and how requested. Also added reference to MSRC’s portable communications trailer.</li> <li>• Appendix J – Added acting Battalion Chief to the list of QIs. Removed Refinery Shift Coordinators (Leaders) as QIs. Updated names of Oil Spill ICs (on-call).</li> <li>• Appendix H-1 – Added availability of trajectory modeling with Chevron’s Environmental Functional Team activation. Also availability of local consultants/contractor using OilMap trajectory software.</li> <li>• Appendix H-1- Added SF PORTS information for environmental monitoring.</li> <li>• Appendix H-3 – Added wind and current effect information.</li> <li>• Appendix F – Updated list of acronyms and abbreviations.</li> </ul>	V. Blalack
22	February 2009	March 2009	<ul style="list-style-type: none"> <li>• Table of Contents – corrected pagination of Sections 202 &amp; 203.</li> </ul>	V. Blalack

			<ul style="list-style-type: none"> <li>• Figure 201-3 – updated contact information.</li> <li>• Figure 201-4 – updated contact information.</li> <li>• Figure 201-5 – updated contact information.</li> <li>• Sections 202 &amp; 203 – corrected pagination separating Sec 202 &amp; 203.</li> <li>• Table 500 – added Qualified Individual training requirement and correct nomenclature.</li> <li>• Table 600-1 corrected agencies addresses.</li> <li>• Appendix B-1, page B-3, updated agencies contact information.</li> </ul>	
23	March 2010	April 2010	<ul style="list-style-type: none"> <li>• New Cover Page</li> <li>• Figure 201-2, corrected MSRC phone number.</li> <li>• Figure 201-4, included SLC to mandatory notification list.</li> <li>• Figure 201-7, included SLC reporting requirements.</li> <li>• Figure 203-2, updated Spill Response Team roster.</li> <li>• Section 206, page 200-33, included language required by SLC iaw RLW lease mitigation measures.</li> <li>• Figure 400-2, removed #3Gas line from Total Line Drainage table; had</li> </ul>	V. Blalack

23	March 2010	April 2010	<p>negligible effect on overall calculations.</p> <ul style="list-style-type: none"> <li>• Figure 400-4, removed 1 of # 4 F/O amount in Total Line Drainage table; was a duplicate and did not affect over all calculations.</li> <li>• Figure 302-1, updated Long Wharf spill history.</li> <li>• Table 60-1, corrected State Lands Commission's Long Beach office address.</li> <li>• Table B-1, updated Cal EMA notification info.</li> <li>• Appendix C, para C-2, updated containment equipment.</li> <li>• Table C-1, updated spill response equipment: removed White Boat and added Orange Boat.</li> <li>• Appendix J, page J-3, updated QI list.</li> </ul>	V. Blalack
24	May 2011	May 2011	<p>5 year USCG Update:</p> <ul style="list-style-type: none"> <li>• New Cover Page</li> <li>• Updated Cover Letter</li> <li>• Updated TOC and page numbering</li> <li>• Updated Management Approval Letter</li> <li>• Updated 33 CFR 154 Regulatory Cross Index</li> <li>• Included USCG interim 5 year plan approval letter</li> <li>• Updated USCG revision</li> </ul>	M. Johnson

			<p>approval letter</p> <ul style="list-style-type: none"> <li>• Updated DFG/OPR Contingency Plan Verification Letter</li> <li>• Updated MSRC and CVX Corp. NPREP letters</li> <li>• Section 100, updated title of facility contact for correspondence and QI section</li> <li>• Figure 201-4, updated agency contact information to mirror RI 410 updates from Contra Costa County 2010 audit</li> <li>• Figure 201-5, updated phone numbers for MSRC home office, Dutra, and CA Oiled Wildlife Care Network</li> <li>• Figure 201-6, updated consultant contact information</li> <li>• Section 203-2, updated language to include the EOC as a command post</li> <li>• Figure 203-2, updated Spill Response Team Roster and position assignments</li> <li>• Section 204, updated Fire Equipment section to account for MOTEMS firewater upgrades</li> <li>• Section 205, added section 205.3.7 for WCD incident management</li> <li>• Section 206, updated text to include required language for CSLC</li> </ul>	
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			<p>Lease Mitigation Measures</p> <ul style="list-style-type: none"> <li>• Section 200, updated pagination</li> <li>• Section 300, updated spill history and pagination</li> <li>• Section 400, updated appendix reference in section 403</li> <li>• Section 600, updated table 600-1 for response plan distribution contacts</li> <li>• Appendix A, updated section A-15 for clarity</li> <li>• Appendix B, updated phone numbers</li> <li>• Appendix C, Updated Equipment Lists for the RLW, MSRC, and added MSRC Aerial Tracking Assets</li> <li>• Appendix E, added clarifying language for site Safety and Health Plan development, distribution, and integration into response actions</li> <li>• Appendix F, updated acronyms</li> <li>• Appendix I, provided latest copy of MSRC Execution Agreement</li> <li>• Appendix J, Updated QI list</li> </ul>	
24	May 2012	May 2012	<ul style="list-style-type: none"> <li>• Updated Cover Letter</li> <li>• Updated TOC and page numbering</li> </ul>	M. Johnson

			<ul style="list-style-type: none"> <li>• Updated Management Approval Letter</li> <li>• Updated DFG_OSPR annual Contingency Plan Review Confirmation letter dated July 2011.</li> <li>• Replaced MSRC and Corporate Emergency Response NPREP letters</li> <li>• Updated California Certificate of Financial Responsibility (CA COFR)</li> <li>• Figure 203-2, updated Spill Response Team Roster and position assignments</li> <li>• Section 300, updated spill history and pagination</li> <li>• Appendix C, Updated MSRC Equipment List</li> <li>• Appendix J, Updated QI list</li> </ul>	
25	May 2013	May 2013	<ul style="list-style-type: none"> <li>• Plan reviewed. No updates or changes required.</li> </ul>	J.D. Tydingco
26	Sept 2014 Oct 2014	Nov 2014	<ul style="list-style-type: none"> <li>• Appendix C revision</li> <li>• Appendix J, Updated QI list</li> <li>• Section 206.2.4 revision</li> </ul>	J.D. Tydingco
27	March 2015 Nov 2015	Nov 2015	<ul style="list-style-type: none"> <li>• Figure 201-4, updated agency contact information to mirror RI 410 updates.</li> <li>• Figure 203-2, updated</li> </ul>	J.D. Tydingco

28	March 2016	May 2016	5 year USCG Update: <ul style="list-style-type: none"> <li>• New Cover Page</li> <li>• Updated Cover Letter</li> <li>• Updated TOC and page numbering</li> <li>• Updated Management Approval Letter</li> <li>• Included USCG interim 5 year plan approval letter</li> <li>• Updated USCG revision approval letter</li> <li>• Updated DFW/OSPR Contingency Plan Verification Letter</li> <li>• Updated MSRC and CVX Corp. NPREP letters</li> <li>• Section 100, updated contact for Agent for Service of Process.</li> <li>• Figure 201-1, updated to change name of MSDS to SDS.</li> <li>• Figure 201-4, updated to change name of MSDS to SDS.</li> <li>• Figure 203-2, updated Spill Response Team Roster and position assignments</li> <li>• Section 204.8, created to reference Response Strategy for zones defined in 204-1 and pagination.</li> </ul>	
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			<ul style="list-style-type: none"> <li>• Section 300, updated 302-1 Spill history</li> <li>• Section 304.5, updated hyperlink to the California Wildlife Response Plan and pagination</li> <li>• Section 400, updated pagination</li> <li>• Section 500, 502.1 and 502.2 updated requirements for Equipment deployment drills.</li> <li>• Section 502.5, updated hyperlinks and examples for Drills and Exercise Forms</li> <li>• Section 600, updated table 600-1 for response plan distribution contacts</li> <li>• Appendix A, updated section A-1.5 for clarity and pagination</li> <li>• Appendix B, updated pagination</li> <li>• Appendix C, updated pagination</li> <li>• Appendix E, updated pagination</li> <li>• Appendix F, updated pagination</li> <li>• Appendix J, Updated QI list</li> </ul>	
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## **Regulatory Cross Indices**

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Cross-references to the individual agency regulations are provided in the following tables.

Table A	USCG 33 CFR §154
Table B	EPA 40 CFR §112
Table C	Title 14 CAC §817.02.

**Table A. Cross Index to U.S. Coast Guard Facility Response Plan Requirements.**

USCG 33 CFR 154.1035 <sup>a)</sup>		<u>Location in this Plan</u>
(a)	(a)(1)-(3) Introduction and Plan Content (a)(4) Table of Contents (a)(5) Cross-Index (a)(6) Record of Changes	Sec. 100 TOC – i xvi ii
(b)	Emergency Response Action Plan (1) Notification Procedures (2)(i) Spill Mitigation (2)(ii) Spill Mitigation (2)(iii) Spill Mitigation (3)(i) Facility's response activities (3)(ii) QI Responsibility and Authority (3)(iii) Spill Management Personnel (3)(iv)(A) Equipment Lists (3)(iv)(B) OSRO (3)(v) SMT Job Descriptions (4) Sensitive areas (5) Disposal Plan	Sec. 200 Sec. 201 Sec. 400 Sec. 202 400-4 100-3, 204, 205 100-3 203 Appendix C Appendix I Sec 203 Sec. 206 Sec. 207
(c)	Training and Exercises	Sec. 500
(d)	Plan Review and Update Procedures	Sec. 600
(e)	Appendices (1) Facility-specific information (2) List of contacts (3) Equipment lists and records (4) Communications plan (5) Site-specific safety and health plan (6) List of acronyms and definitions	Appendix A Appendix B Appendix C Appendix D Appendix E Appendix F

<sup>a)</sup> Final Rule 33 CFR 154

**Table B. Cross Index to EPA 40 CFR 112.**

<u>EPA 40 CFR 112</u>		<u>Location in this Plan</u>
1.0	Standard Facility Specific Response Plan	
1.1	Emergency Response Action Plan	201 – 207
1.1.1	Emergency Response Coordinator Information	104, 201
1.1.2	Emergency Notification Phone List	201
1.1.3	Spill Response Notification Form	201
1.1.4	Equipment List and Location	205, Appendix C
1.1.5	Facility Response Team	203
1.1.6	Evacuation Plan	Appendix K
1.1.7	Immediate Actions	204
1.1.8	Facility Diagrams	Appendix A
1.2	Facility Information	Appendix A
1.3	Emergency Response Information	104
1.3.1	Notification	201
1.3.2	Equipment	205, Appendix C
1.3.3	Personnel	203
1.3.4	Evacuation Plans	Appendix K
1.3.5	Coordinator's Duties	104, 201, 203
1.4	Hazard Evaluation	301
1.4.1	Hazard Identification	301
1.4.2	Vulnerability Analysis	303
1.4.3	Analyzing the Potential for a Spill	301
1.4.4	Spill History	302

**Table B. Cross Index to EPA 40 CFR 112 (continued).**

<u>EPA 40 CFR 112</u>		<u>Location in this Plan</u>
1.5	Discharge Scenarios	402
1.5.1	Small and Medium Discharge	402
1.5.2	Worst Case Discharge	402
1.6	Discharge Detection Systems	Appendix A
1.6.1	Discharge Detection by Personnel	Appendix A
1.6.2	Automated Discharge Detection	Appendix A
1.7	Plan Implementation	100
1.7.1	Disposal Plans	270
1.7.2	Containment and Drainage Planning	Appendix A
1.8	Self-Inspection, Training, and Meeting Logs	500, Appendix A
1.8.1	Facility Self-Inspection	Appendix A
1.8.1.1	Tank Inspection	Appendix A
1.8.1.2	Response Equipment Inspection	Appendix A
1.8.1.3	Secondary Containment Inspection	Appendix A
1.8.2	Mock Alert Drills	502
1.8.2.1	Mock Alert Drill Logs	502
1.8.3	Training and Meeting Logs	501
1.8.3.1	Personnel Training Logs	501
1.8.3.2	Discharge Prevention Meetings Log	501
1.9	Diagrams	100, Appendix A
1.10	Security	204
2.0	Response Plan Cover Sheet	Table of Contents
3.0	Definitions	Appendix F
4.0	Acronyms	Appendix F



## EPA Response Plan Coversheet and Information

General Information	
Owner / Operator of Facility:	Chevron Products Company
Facility Name:	Chevron Richmond Refinery
Facility Address:	841 Chevron Way, Richmond, CA 94802-0627
Facility Phone Number:	(510) 242-2772 (Refinery Shift Leader)
Latitude and Longitude:	37 55' 24" North/ 122 24' 39" West
Dun and Bradstreet Number:	009141559
Standard Industrial Classification (SIC) Code:	2911
Largest Oil Storage Tank Capacity:	740,929 bbls (T-3106)
Maximum Oil Storage Capacity:	10,296,122 bbls.
Number of Oil Storage Tanks:	55
Worst Case Discharge Amount:	681,157 bbls.
Facility Distance to Navigable Waters:	Less than 3 nautical mile

<i>Applicability of Substantial Harm Criteria</i>	
Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?	YES
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?	NO
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?	YES
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?	NO
Does the facility have a total oil storage capacity of greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?	NO

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## EPA Response Plan Coversheet and Information – Continued

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### CHEVRON RICHMOND REFINERY

#### EPA CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.



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Signature

Mark Ayers

---

Name

Chief, Emergency Services Division

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Title

May 15, 2011

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Date

**Table C. Cross Index to California Office of Oil Spill Prevention and Response Requirements**

<u>Title 14 CCR 817.02</u>		<u>Location in this Plan</u>
(a)	Introductory material (1) Facility Information/ Certification Statement/ COFR (2) Qualified Individual (3) Name, address, etc. for agent for service of process (4) Copy of written contract with spill response organization	100  104, 201, Appendix A  104  Appendix C
(b)	Facility description (1) Design and operation (2) Facility site and surrounding area  (3) Pipeline, hose, arm, & PRD maintenance and testing info; Automatic controls; leak detection & spill safety/alarm system devices equipment and procedures	Appendix A
(c)	Prevention measures (1) Risk and hazard analysis Spill History/ Hazard Analysis (2) Off-site consequence analysis (A) 72 hr trajectory" analysis (B) Discussion of toxic effects (3) Listing of potentially affected sensitive resources (4) Required prevention measures (5) Other leak prevention measures	301  302    206  Appendix A
(d)	On-water containment and recovery (1) Reasonable worst case spill (RWCS) (2) Persistence and emulsification factors (3) Response capability standards (4) Non-cascadable equipment (5) On-water response equipment and services (6) On-water response and recovery strategies	400  400  400 205 205  204

(e)	Shoreline Protection and Cleanup	
	(1) Shoreline response planning volumes	400
	(2) Shoreline response equipment and services	205
	(3) [Reserved]	
	(4) Shoreline response and cleanup strategies	204

**Table C . Cross Index to  
California Office of Oil Spill Prevention and Response Requirements (continued).**

<u>Title 14 CCR 817.02</u>		<u>Location in this Plan</u>
(f)	Response procedures (1) Organization of facility response system and management team (ICS) (2) Procedures for establishing command sites (3) Checklist/flow chart/decision tree describing stages of cleanup (4) Provision for Initial emergency services (5) Methods/equipment to minimize spill (6) Methods, equipment, and lines of communication (7) Post spill review (including methods for review) (8) Means to establish exclusion, Decon, & Safe Zones  (9) Site Safety Plan	203 203, 204 204 202, 204 202 Appendix D  204 Appendix E  Appendix E
(g)	Notification procedures (1) List of contacts (2) Procedure for immediate notification (3) Call-out procedure (resources) (4) Notification Checklist  (5) Report not delayed for information (6) Spill Update Reporting	201, Appendix B 201 201 201  201 201
(h)	Temporary waste storage (1) ID sufficient temporary waste storage (2) ID party to maintain recovered oil and oily waste (3) ID site criteria for selecting temporary storage sites (4) Permits required (5) Methods to expedite state process for permitting	207 207  207 207 207
(i)	Wildlife rehabilitation requirements (1) Use of CA OWCN (2) or Description of procedures & resources under contract	201, 304

**Table C . Cross Index to  
California Office of Oil Spill Prevention and Response Requirements (continued).**

<u>Title 14 CCR 817.02</u>		<u>Location in this Plan</u>
(j)	Training (1) Response Equip training (2) Operational risk reduction training (3) Safety training (4) Training Records	501 501 501 501
(k)	Drills and Exercise  (1) Exercise of all plan elements (Exercise of Offsite Consequence Analysis Sites) - Notification Drill - Response Equipment Drill - Table Top Exercise (2) Training Substitution  (3) Response Resource Drills  (4) Drill Components  (5) Drill Records	502  502 502 502 502 502  502  502  502

## 100 INTRODUCTION

The purpose and intent of this oil spill response plan, and appendices herein, is to satisfy the requirements of Federal and State oil spill response regulations as executed by the U.S. Coast Guard, Environmental Protection Agency, and the California Office of Oil Spill Prevention and Response (OSPR), respectively.

This Contingency Plan was originally developed for both the Chevron Richmond Refinery and Richmond Long Wharf by Woodward-Clyde Consultants pursuant to, and in fulfillment of, the Federal Oil Pollution Act of 1990 (OPA-90) requirements, implemented by the U.S. Coast Guard and Environmental Protection Agency (EPA) Regulations.

In 1993, the State of California adopted oil spill prevention and response planning regulations, under Title 14, Division 1, Subdivision 4, Chapter 2, Subchapter 3, for marine facilities in coastal California. The Richmond Long Wharf would be considered a “marine facility” as defined in these regulations and, as such, this plan addresses the requirements of this state regulation.

Consistent with the “Substitute Plan” provisions of the OSPR regulations [Section 816.02(d)], the original OPA-90 Plan has been amended for use as the Principal Volume of the Richmond Long Wharf Contingency Plan. A pocket Chevron Incident Response Guide (ChIRG), as required by these regulations, has been prepared and is submitted to OSPR under separate cover.

Information required by State Regulations is incorporated into both the body of the plan, and subsequent appendices. Table C in the regulatory cross indices section at the front of this plan provides an index specifying the location of all OSPR-required elements, by regulation section, within this Contingency Plan.

## 101 OVERVIEW AND USE OF PLAN

The Chevron Richmond Refinery and Richmond Long Wharf (RLW) are designed, maintained, and operated to minimize the potential for spills. Chevron recognizes, however, that the potential for spills can never be completely eliminated. This Spill Prevention and Emergency Response Plan (SPERP) is designed to provide guidance for the emergency response to oil spills to water associated with the operation of both the Refinery and Long Wharf. It is intended to be used in coordination with the National Contingency Plan and local Area Contingency Plan (ACP). The SPERP relies on Chevron personnel for immediate emergency actions and spill response management. Resources from Oil Spill Removal Organizations, private organizations and local contractors may be utilized for response implementation, if necessary. Revisions to the SPERP should be in accordance with the procedures specified in Section 600. A record of revisions will be maintained on the Revision Log located at the front of the plan.

All correspondence regarding this plan should be directed to:

Chevron Products Company  
Attn.: Emergency Response Coordinator  
Emergency Services Division  
841 Chevron Way  
Richmond, CA 94802-0627

## 102 SCOPE AND LIMITATIONS OF PLAN

This SPERP summarizes Chevron's Richmond Refinery, including the RLW's, oil spill response organization, information, resources and training. It is formatted to be consistent with the outline provided in the U.S. Coast Guard Navigation and Vessel Information Circular (NVIC) No. 7-92, Interim Guidelines for the Development and Review of Response Plans for Marine Transportation-Related Facilities Including Deepwater Ports, COMDTPUB P16700.4 and in accordance with the California Department of Fish and Game Office of Oil Spill Prevention and Response Regulations (CCR Title 14, Division 1, Subdivision 4, Chapter 2, Subchapter 3).

The SPERP also provides for an immediate response capability for response to oil spills to water from non-marine transportation related aspects of the facility, including the two PacTank pipelines. In addition, it provides an organizational mechanism for response to spills of any magnitude.

This SPERP presents a response organization and response plans, and identifies the resources available and required for a spill response effort. All spills are unique events requiring individual assessment and treatment. Procedures and recommendations presented in this plan should therefore be used as a guide, and are intended to be tailored to each incident as necessary.

## 103 COMPANY POLICY AND MANAGEMENT

The goal for operations at the Richmond Refinery and RLW is zero spillage of oil; however, should a spill occur, response actions based on this plan will be implemented. Chevron will comply with all applicable federal, state and local laws and regulations concerning its operations and cooperate to the fullest extent possible with government officials involved in oil spill prevention and response operations. Members of the on-site spill response team will be familiar with the contents of the SPERP associated with their respective roles.

## 104 FACILITY INFORMATION

### 104.1 Facility Data/24-hour Contact

Location: Contra Costa County, California.

The address of the facility is:

Chevron Products Company  
841 Chevron Way  
Richmond, CA 94802 - 0627

(510) 242-2302 (Chevron Fire Department Dispatch)

(510) 242-2160 (Battalion Chief)

(510) 242-5050 (Refinery Shift Leader - RSL)

**Certificate of Financial Responsibility Number:** 20052-00-001

**Facility call sign:** WRS 943 RICHMOND LONG WHARF.

The facility is equipped with VHF radio manned 24 hours on Channel 10 (156.5 MHz).



**104.2 Agent for Service of Process**

Ms. Mary A. Francis  
 Corporate Secretary  
 Chevron Corporation  
 Building A/A4028  
 6001 Bollinger Canyon Rd.  
 San Ramon, Calif. 94803

**104.3 Qualified Individual (QI)**

The Richmond Refinery operates on a 24-hour continuous basis. The Plant Protection Battalion Chief and Refinery Shift Coordinator positions are filled on the same basis and have been authorized to act as QI for the Refinery. In addition, designated Oil Spill Incident Commanders (On-Call IC) are authorized to act as QIs and at least one is available to respond to the refinery on a 24-hour, 7-day-per-week basis. A listing of all QIs for the Richmond Refinery is located in Appendix J. QIs meet the following criteria:

1. Are located within the United States
2. Speak Fluent English
3. Are familiar with the implementation of the facility response plan; and
4. Are trained in the responsibilities of the QI under the response plan

Each QI has received a document designating them as a QI and specifying their authority, on behalf of the Richmond Refinery to the full extent required by the Federal Oil Pollution Act of 1990 to:

1. Activate and engage in contracting with oil spill removal organizations
2. Act as a liaison with the Federal and State On-Scene Coordinators
3. Obligate funds required to carry out response activities

The intent behind having 3 levels of refinery management designated as QI's is to ensure that all appropriate actions are being taken during the response. During the emergency, the Battalion Chief will be the initial Incident Commander and Qualified Individual. He/she will activate whatever response resources he/she deems appropriate. If the response can be handled quickly with on-site resources, he/she will remain the Incident Commander. The Refinery Shift Leader and On-Call IC will monitor the situation and assist the Battalion Chief as necessary in the response. The On-Call IC will only relieve the Battalion Chief as a Qualified Individual if, in their judgment, the situation warrants it. If this occurs, the RSL or On-Call IC will notify the State and Federal On-Scene Coordinators that they have assumed the responsibility of the Qualified Individual. In an extensive spill response, the Battalion Chief will be relieved as the Incident Commander by an On-Call IC. At that time, the Refinery Shift Leader will authorize that Incident Commander to act on his/her behalf with complete authority.

#### 104.4 Facility Summary

The Richmond Long Wharf is situated on the northeast side of San Francisco Bay. The associated petroleum storage tanks and pipelines are situated in the refinery. All storage tanks are located within the Refinery's containment area. See Appendix A for more detailed information on the facility description including tank and containment maps.

The Richmond Long Wharf is a T-head pier, with an overall length of 3,396 feet. It consists of concrete and wooden piles and a concrete superstructure connected to shore 4,200 feet away by a piled causeway. Berth 1-2-3 deck level is 13.3 feet above Mean Lower Low Water (MLLW). Berth No. 4 deck level is 25 feet above MLLW. Berths #1, #2, #3, #4 are located on the west side and Berths #9 and #11 are located on the east side.

The Richmond Long Wharf is capable of transferring oil to or from all of the berths simultaneously. The facilities are operated 24 hours a day, 7 days a week.

Section 200 describes the procedures for notification of oil spill emergency response organizations, emergency response personnel and activities and supplemental guidance for response. The subsections include:

- 201 Spill Notification Procedures
- 202 Spill Mitigation Procedures
- 203 Spill Response Organization
- 204 Response Strategies
- 205 Response Resources
- 206 Environmental Sensitive Sites
- 207 Waste Disposal Plan

### 201.1 General

The purpose of this section is to outline the notification procedures required during an oil spill to water. The Refinery Shift Leader (RSL) is responsible for ensuring that notifications are made using the checklist in Figure 201-4 (Marine Oil Spill: Agency Notification Checklist). The Battalion Chief is responsible for notifying Marine Spill Response Corporation (MSRC) to respond. If the spill is minor and can be handled with local assets, MSRC will not necessarily be contacted.

### 201.2 Typical Response Summary

Initial response and emergency notifications are the responsibility of the Battalion Chief and Refinery Shift Leader. These supervisors are available at the facility on a 24-hour, 7-day-per-week basis. Refer to Figure 201-2 – Qualified Individual Contacts for current contact listing.

When a spill occurs, ship and terminal personnel are instructed to immediately notify the Wharf Operator in charge of the transfer. Upon being notified of the spill, the Wharf Operator will shut down the cargo transfer. By radio, he will contact the Wharf Head Operator to inform him/her about the spill. The Wharf Head Operator will alert the Battalion Chief (initial Incident Commander and Qualified Individual). The Wharf Head Operator is authorized and expected to initiate initial defensive response efforts before the arrival of the Battalion Chief.

The four basic activities that should be conducted immediately following discovery of a spill include:

#### 1) ASSESSMENT:

The first priority is to ensure the safety of facility personnel and make an initial assessment of the situation. First on-scene personnel shall conduct site characteristic survey to include air monitoring both on and off shore and prior to entering the spill area. Oil Spill Emergency Information Form (Figure 201-1) is provided for use in recording information collected during the initial assessment and for use in providing consistent information during internal and external notifications. The Oil Spill Emergency Information Form should be completed to the fullest extent possible based on the initial assessment of the situation. Never guess at information pertaining to a spill -- if specific details are unknown at the time of the initial assessment, state so on the Oil Spill Emergency Information Form.

The Battalion Chief will report to the spill scene, assess the situation and immediately take charge of the response effort. If the spill is minor and can be handled by the manpower and equipment available on the scene, the Battalion Chief will direct the response effort accordingly. If he/she determines that more response equipment is required he/she will immediately request our primary spill response contractor to respond.

Our primary spill response contractor is currently the Marine Spill Response Corporation (MSRC) (see Figure 201-3 – Primary Spill Response Contractor). Additional contractors which may provide supporting services are identified in Figure 201-5 and in Appendix B.

#### 2) CONTROL/ CONTAINMENT:

After an evaluation of the situation and responder safety has been ensured, the initial local response actions that can be done safely will be performed depending on the personnel on-scene at the time of the incident. The Battalion Chief and Head Wharf Operator will ensure that individuals have been properly trained and equipped for the task. Control and Containment tasks include the following:

- Shut off the flow or stop the potential emergency if possible
- Contain the spill defensively
- Call for help

### 3) NOTIFICATIONS:

Once the Battalion Chief has assessed the situation he/she will immediately notify the Refinery Shift Leader (RSL) with details of the spill. The RSL will follow immediately with notification of federal, state and local authorities in the order identified in Figure 201-4 (Marine Oil Spill: Agency Notification Checklist).

The oil spill notifications are identified in their *Order of Priority*. Provide the same information from Figure 201-1 to all parties. ***Do not provide guessed information!***

Supplemental notifications are identified at the end of Figure 201-4 and may be performed following the required notifications at the discretion of the RSL and IC.

***Note that notifications of National Response Center, California Office of Emergency Services, and Contra Costa County Health Services Department must be made within 30 minutes of initial discovery of the spill.***

*Update reports to agencies should be made every shift, but no less than every 12 hours for the first 48 hours of response.*

Figures 201-5 and 201-6 provide supplemental information and reference contacts for use at the direction of the Incident Commander.

Specifics relating to contacts with authorities and response personnel may be recorded in the table columns provided.

### 4) Spill Team Mobilization

Once the Battalion Chief has determined that more resources will be required than are available on the wharf, he will request that the Refinery Fire Brigade respond to the spill.

This request will also begin an emergency call out process. The Refinery Dispatcher (a position filled in the refinery on a 24-hour-per-day, 7-day-per-week basis) will call out the Refinery's Emergency On-Call Management Team who are available by pager at all times. The most senior member of the On-Call team is Management No. 1. The Dispatcher will then call in (by pager and phone) members of the Oil Spill Response Team/Spill Management Team to assist the Battalion Chief in managing the spill response.

Depending on the nature of the incident, the Battalion Chief may be relieved by the on-call Oil Spill Incident Commander who is called out as part of the Oil Spill Response Team/Spill Management Team. A listing of members of the Oil Spill Response Team/Spill Management Team is provided in Section 203 with their training qualifications.

The scope of the response will dictate the number of positions that will be filled and the number of personnel to be called out. If further resources will be required, the Incident Commander can also call in the Chevron Corporation Emergency Response Team. A summary of the Chevron Corporation Emergency Response Team capabilities is located in Appendix B.

**SECTION 201**

The following checklist summarizes the order and use for each Figure in Section 210 to assist with the spill response.

**EMERGENCY RESPONSE CHECKLIST**

Order	No.	Title	Action
1	Figure 201-1	Oil Spill Emergency Information Form	Record spill information
2	Figure 201-2	Qualified Individuals	Contact first available Qualified Individual (QI)
3	Figure 201-3	Primary Spill Response Contractors	Mobilize applicable spill response contractor
4	Figure 201-4	Marine Oil Spill Notifications	Call Federal, State, and Local Authorities
N/A	Figure 201-5	Reference Contacts – Contractors	Reference information for supplemental contractors
N/A	Figure 201-6	Reference Contacts – Consultants	Reference information for supplemental consulting services
N/A	Table 201-7	Verbal & Written Reports	Reference information on agency reporting requirements

**FIGURE 201-1 CHEVRON OIL SPILL EMERGENCY INFORMATION FORM**

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Is this the Initial Assessment? Yes [ ]; No [ ]

Completed by \_\_\_\_\_ Response Role: \_\_\_\_\_

**I. Incident Assessment: (Known Details Only—Do Not Speculate!)****A. Fire and Injury Status**

1. Does a Significant Fire Risk exist? \_\_\_\_\_ If so, what is being done to mitigate the risk?

2. Number of casualties: \_\_\_\_\_

3. Type of injuries: \_\_\_\_\_

4. Names of injured: \_\_\_\_\_

5. Hospital(s) Transported to: \_\_\_\_\_

6. Other Medical Assistance underway: \_\_\_\_\_

**B. Details of Incident**

1. Source Control Situation, \_\_\_\_\_ Secured at \_\_\_\_\_ hrs

\_\_\_\_\_ Estimated spill rate \_\_\_\_\_ (gpm/bph)

2. Description of Incident (include timing): \_\_\_\_\_

3. Name of Spilled Material: \_\_\_\_\_

4. Estimated Quantity of Material Released: \_\_\_\_\_ (gal/ bbl.)

**C. Information on any Vessel(s) Involved:**

1. Vessel Name (if any involved): \_\_\_\_\_

2. Compartments Impacted. \_\_\_\_\_

3. Total capacity of affected tanks: \_\_\_\_\_ (gal/ bbl.)

4. Vessel Owner (if known): \_\_\_\_\_

**D. Nature of Material Released**1. **SDS** number: \_

2. OSHA exposure Standard: \_\_\_\_\_ PEL (for 8 hours) \_\_\_\_\_

3. Hazards to Human Health: \_\_\_\_\_

4. Monitoring done to assess exposure hazard: \_\_\_\_\_

5. Air monitoring results: LEL \_\_\_\_\_ O<sub>2</sub> \_\_\_\_\_ CO \_\_\_\_\_ H<sub>2</sub>S \_\_\_\_\_

**SECTION 201**

**FIGURE 201-1 OIL SPILL EMERGENCY INFORMATION FORM (PAGE 2)**

**II. Incident Response: Date/Time:** \_\_\_\_\_ **Name:** \_\_\_\_\_

**A. Areas Affected** (Use back of page or chart if needed.)

1. Brief description of the extent and location of Oil Slick, including the affected shoreline:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

—

2. Wildlife effected: \_\_\_\_\_

\_\_\_\_\_

**B. Response Status:**

1. Current Response Organization:

IC \_\_\_\_\_ OPS \_\_\_\_\_

PLN \_\_\_\_\_ LOG \_\_\_\_\_ FIN \_\_\_\_\_

Safety \_\_\_\_\_ Info \_\_\_\_\_ Liaison \_\_\_\_\_

2. MSRC activated @ \_\_\_\_\_ hrs

3. Other Contractors notified (and time): \_\_\_\_\_

4. Response personnel on-scene: Company: \_\_\_\_\_ Contractors: \_\_\_\_\_

(Number as of \_\_\_\_\_ hrs)

5. Agency Personnel on-scene: Coast Guard: \_\_\_\_\_ OSPR: \_\_\_\_\_

Other: \_\_\_\_\_

(Number as of \_\_\_\_\_ hrs)

6. Number of boats on water: Chevron \_\_\_\_\_ Other \_\_\_\_\_

(as of \_\_\_\_\_ hrs)

7. Feet of boom deployed \_\_\_\_\_ (as of \_\_\_\_\_ hrs)

8. Oil Recovery equipment on-scene-- \_\_\_\_\_ BPD capacity (as of \_\_\_\_\_ hrs)

9. Shoreline Cleanup Activities Underway: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



10. Shoreline Protection Activities Underway: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C. Climatic Conditions:**

1. Wind Direction and Speed: \_\_\_\_\_ : Wave Height \_\_\_\_\_ ft: Visibility: \_\_\_\_\_
2. Tide situation: [ ] Slack [ ] Flood [ ] Ebb  
High tide at \_\_\_\_\_ hrs, Low at \_\_\_\_\_ hrs
3. Water Temp: \_\_\_\_\_ °F
4. Air Temp: \_\_\_\_\_ °F
5. Visibility: \_\_\_\_\_ miles
6. Overall conditions (circle one): Sunny      Cloudy      Rain      Fog  
Overcast  
Other: \_\_\_\_\_
7. Estimated ceiling: \_\_\_\_\_ Feet

Map:

FIGURE 201-2 QUALIFIED INDIVIDUALS

(Refer to Appendix J for listing of QI)

<b>Title</b>	<b>Pager No.</b>	<b>Phone Number(s).</b>	<b>Refinery Internal</b>	<b>Contact (time)</b>
<b>Oil Spill IC On-Call</b> (via CFD Dispatch)	Paged via Dispatcher	<u>510-242-2302</u>	X 555 Emerg. Only	
<b>Battalion Chief</b> (via CFD Dispatch)	Paged via Dispatcher	(510) 242-2160 242-2302 (Dispatch)	X 555 Emerg. Only	
<b>Designated Acting Battalion Chief</b> (via CFD Dispatch)	Paged via Dispatcher	(510) 242-2160 242-2302 (Dispatch)	X 555 Emerg. Only	

FIGURE 201-3 PRIMARY RESPONSE CONTRACTORS

<b>Name</b>	<b>Service</b>	<b>24 hr. Phone Number</b>	<b>Contact (time)</b>
<b>MARINE SPILL RESPONSE (MSRC)</b>	<b><u>Primary OSRO</u></b> Open ocean, offshore, near shore. Shoreline cleanup by subcontractors.	(800) 645-7745	

## SECTION 201

FIGURE 201-4

### COMMUNICATION/NOTIFICATION CHECKLIST

**Make all calls from recorded phone, 242-5654 or 242-2773, if at all possible.**

For incident command, mgt. #2 phones 242-2296 and 242-4523 are recorded.

If you reach a pager, enter the area code and phone number at which you can be reached.

Agencies can reach us at 510-242-2773 (recorded)

### **Marine Oil Spill: Agency Notification Checklist**

**When Complete, Fax to CFD Dispatch (510) 242-5853/242-2779**

Call Order/ Time Limit	Organization	Telephone	Person Calling on Behalf of Chevron	Phone No. From Which Call Made	Name of Person Contacted	Date	Time	Notes/Comments Made To/From Organization
<b>REQUIRED NOTIFICATIONS – Must be Contacted for ANY Event</b>								
<b>1. (30 min.)</b>	National Response Center (NRC)	800-424-8802						NRC Event #
<b>2. (30 min.)</b>	State Warning Center California Emergency Management Agency	800-852-7550 or 916-845-8911						OES Event #
<b>3. (30 min.)</b>	Contra Costa County Health Services Department (CCC HSD)	925-335-3232 If no answer, call Sheriff's Dispatch @ 925-646-2441						72 hour follow-up requested?
<b>4.</b>	U.S. Coast Guard Sector San Francisco Command Center	415-399-3530						Advise that a qualified individual (QI) is on scene.
<b>5.</b>	CA Dept. of Fish & Wildlife – Office of Spill Prevention & Response (OSPR)	916-445-9338 Contact Name: Kristine Klugge						
<b>6.</b>	Contra Costa County Office of Emergency Services	925-646-4461						
<b>7.</b>	Richmond Fire/Police Central Dispatch	510-620-6933 (unless life threatening 911) or 510-233-1214						
<b>8.</b>	Chevron Emergency Information Center (CEIC) <b>SDS</b> Information	800-231-0623 or 510-231-0623						Request a toxicologist to stand by if needed.
<b>9</b>	CA State Lands Commission (CA SLC)	562-590-5201						

## SECTION 201

### COMMUNICATION/NOTIFICATION CHECKLIST

**Make all calls from recorded phone, 242-5654 or 242-2773, if at all possible.**

For incident command, mgt. #2 phones 242-2296 and 242-4523 are recorded.

If you reach a pager, enter the area code and phone number at which you can be reached.

Agencies can reach us at 510-242-2773 (recorded)

### **Marine Oil Spill: Agency Notification Checklist**

**When Complete, Fax to CFD Dispatch (510) 242-5853/242-2779**

Call Order/ Time Limit	Organization	Telephone	Person Calling on Behalf of Chevron	Phone No. From Which Call Made	Name of Person Contacted	Date	Time	Notes/Comments Made To/From Organization
<b>*10.</b>	Regional Water Quality Control Board (RWQCB). Also call OES and make notification. If no answer, leave message. (M-F — 8 a.m. to 5 p.m.)	Oil Spill Hotline Recorder 510-622-2369 Contact Primary contact, Brian Thompson, 510-622-2422 Backup is Laurent Meillier 510-622-3277						Report oil to water.
<b>*11.</b>	BCDC Oil Spill Program (M-F – 8:30 am to 5 pm)	415-352-3644 Contact Linda Scourtis 415-279-5338 (24-hr cell)						

\*NOTE: Follow-up written notifications are to be handled per RI-434.

FIGURE 201-4 (cont.)

<b>SUPPLEMENTAL CONTACTS – should be contacted as applicable for any significant events</b>								
<b>1.</b>	EPA Region 9 (24 hr)	800-300-2193						
<b>2.</b>	Bay Area Air Quality Management District (BAAQMD)	415-749-4979 800-334-6367 (after normal hours). If left on hold, leave message on 415-749-5050						
<b>3.</b>	California Coastal Commission Oil Spill Program	415-904-5247 or Contact Jonathon Bishop 415-693-8375 (24-hr. cell)						

**FIGURE 201-5 - REFERENCE CONTACTS – CONTRACTORS**

<b>Company</b> (Note: Those in <b>bold print</b> should be contacted first in each category)	<b>Location</b>	<b>Phone No.</b>
<b>Oil Spill Removal Organizations:</b>		
<b>Marine Spill Response Corporation (MSRC).</b>	HQ- Virginia Local Office Customer Service	(800) 645-7745 (510) 215-1833 (703) 326-5617
National Response Corp. (NRC)	Alameda, CA	(510) 749 1390
<b>Dredging Support</b>	<b>Group V oils:</b>	
<b>Dutra Dredging Company</b>	<b>Rio Vista, CA Meredith Management Group Local Office</b>	<b>cell: (707) 333-8748 (local QI) 1-800-981-1287 (707) 374-6339</b>
Manson Construction and Engineering	Richmond, CA	(510)-232-6319
<b>Helicopter Services</b>		
<b>MSRC</b>	<b>Primary OSRO- Aerial surveillance assets</b>	<b>(800) 645-7745</b>
S. F. Helicopters	San Francisco, CA	cell: 650-444-8464 650-635-4500
<b>Wildlife Rehab</b>		
<b>CA Oiled Wildlife Care Network</b>	<b>CA OSPR</b>	<b>1-877-823-6926</b>
International Bird Rescue and Research Center	Berkeley, CA	(707) 207-0380

**FIGURE 201-6 - REFERENCE CONTACTS – CONSULTANTS**

<b>COMPANY</b> (Note: Recommended initial contacts are identified in <b>bold</b> )	<b>SERVICES</b>	<b>CONTACT</b>	<b>PHONE NO.</b>
A. D. Little	Chemistry Support		(800) 677-3000 pgr: (800) 759-7243
Al Allen Spiltec, Inc.	In Situ Burn Arctic Spill Response Expertise	Al Allen	(425)-869-0988 Cell: (425) 503-6111
BlueWater Consultants	Spill Trajectory Support	Terry Joslin	(415) 492-2882 Cell/Pgr (415) 990-2583
<b>Entrix, Inc.</b>	<b>Environmental Monitoring NRDA</b>	<b>Gordon Robilliard</b>	<b>(253)-858-2114 Pager (800) 476-5886</b>
O'Briens	Oil Spill Response	Jim O'Brien Tim Perkins	714-577-2100
Polaris	Shoreline Assessment & Cleanup	Ed Owens	(206) 842-2951 (206) 369-3675
<b>The Response Group</b>	<b>Oil Spill Response, Spill Trajectory and Incident Action Plan (IAP) support</b>	<b>Roy Barrett</b>	<b>(281)-880-5000</b>

*\* RECOMMENDED INITIAL CONTACTS ARE IDENTIFIED IN BOLD*

**FIGURE 201 –7 AGENCY WRITTEN AND VERBAL REPORTS**

AGENCY	SPILL SIZE	VERBAL REPORT	WRITTEN REPORT
National Response Center	Any size oil spill on land, but threatening or in surface waters. Any size oil spill in or threatening navigable waters. Any size oil spill from a regulated pipeline. All hazardous substance releases that equal or exceed the reportable quantity.	Immediately	None
U.S. Environmental Protection Agency	Any size oil spill on land, but threatening or in surface waters. All hazardous substance releases that equal or exceed the reportable quantity.	Immediately	<u>Oil</u> For facility requiring SPCC Plan: if spill is 1,000 gal. or more or if it is the second spill in 12 months.  <u>Hazardous Substance</u> Within 15 days for a release at a RCRA facility.
U.S. Coast Guard	Any size spill of any material in or threatening navigable waters.	Immediately	Upon Request
CA State Office of Emergency Services	All significant spills or releases of hazardous material, including oil.	<u>Initial contact within 30 min.</u> <u>Update max ever y 12 hrs. for first 48 hrs.</u>	A written report should follow verbal notification no later than 30 days following a release.
California Department of Fish and Game (OSPR)	Any size oil spill on land, but threatening or in surface waters. Any size oil spill in or threatening navigable waters. Any size oil spill from a regulated pipeline threatening or in surface waters All hazardous substance releases that equal or exceed the reportable quantity threatening or in surface waters	Immediately	A written review must be forwarded to the OSPR Administrator within 90 days following the completion of response and cleanup procedures.
State Lands Commission	10 bbls. or more	Immediately	N/A
Regional Water Quality Control Board	Any spill into the water	Immediately	Written report within 5 days of discharge
LEPC	All significant spills or releases of hazardous material, including oil	If evacuation of surrounding communities is required, immediately contact the Local Emergency Planning Committee through the State Office of Emergency Services	As planning function only, no written report is required

## 202 SPILL MITIGATION PROCEDURES

Personnel and public safety are the primary considerations in any spill response. Avoid excessive exposure to liquids and vapors. Spilled materials may be extremely flammable and/or explosive.

The following general procedures apply to spills from all types including those from:

- A. Failure of manifold, mechanical loading arm, other transfer equipment, or hoses, as appropriate;
- B. Tank overfills;
- C. Tank failure;
- D. Piping rupture;
- E. Piping leak, both under pressure and not under pressure, if applicable;
- F. Explosion or fire; and
- G. Equipment failure (e.g. pumping system failure, relief valve failure, or other general equipment relevant to operational activities associated with internal or external facility transfers.)

### 202.1 Immediate Response Procedures

1. Chevron employees observing a spill should take emergency action to stop flow at the source, if safe to do so, and notify their supervisor of the spill. The order of these actions will depend on the situation.
2. Immediately upon becoming aware of a spill, the Battalion Chief (Chevron Incident Commander) will assume command of the control, containment and cleanup operations and initiate the following actions:
  - a. Confirm that injured personnel have been attended to and arrange for medical assistance and transport to hospitals, if necessary.
  - b. Confirm that personnel have been assigned to stop the flow of oil and secure leaks if it can be done safely.
  - c. Assess the spill; site safety and parameters such as spill volume, extent and direction of movement will be evaluated. Guidelines to assist in this effort are contained in Figure 201-2 and Section 202.3.
  - d. Request the Refinery Shift Coordinator to notify federal, state and local agencies as described in Section 201.
  - e. Initiate containment actions and cleanup procedures with available dock personnel.
  - f. Activate the Chevron Fire Brigade, the Chevron Oil Spill Response Team, MSRC and any other cleanup contractor(s) as necessary. Phone numbers for these are located in Appendix B.
3. Once oil is spilled, action will be taken as rapidly as possible to control and recover it to minimize impact to the environment. Physical removal of the oil is the preferred action in almost all cases if safe to do so. Effective physical removal will be dependent upon weather, water conditions and the speed with which the slick can be corralled and removed. Volatile products will normally spread and evaporate quickly. Their containment merely reduces the evaporation rate and increases the hazard of fire.



**202.2 Procedures for Prevention and Mitigation of Discharge**

The first, and most important, step in any oil spill response procedures is prevention. Operations at Chevron's Richmond Refinery and Long Wharf are geared toward maintaining the safety of personnel, and preventing oil spills. Details on procedures and practices at the Long Wharf for prevention of oil spills are located in Section A of the Wharf Operations Manual.

Should a spill occur, this SRP will be activated and immediate response procedures will be initiated. Containment and protection measures are briefly discussed in Section 400 of the SRP with supporting details presented in the San Francisco Bay Area Contingency Plan.

**202.3 Detection and Shut Down Procedures**

Having well planned and established detection and shutdown procedures can stop an oil spill before it starts, or ensure that those which do occur are kept to a minimum size. Procedures for oil transfers at the wharf are detailed in Section A of the Wharf Operations Manual.

**202.4 Other Prevention Measures**

Chevron also implements a number of spill prevention measures such as: establishing specific schedules for maintenance and inspection activities for wharf lines and equipment, detailed pre-transfer procedures, extensive use of instrumentation and alarms, etc. The Wharf Operations Manual contains details on these measures. In addition, the refinery (including the wharf) has extensive site monitoring and security procedures.

**202.5 Alcohol and Drug Program**

Chevron has developed and implemented an Alcohol and Drug Program. It provides for the random testing of all terminal employees. The program also offers rehabilitation, treatment and follow-up testing for workers who seek assistance or who are found to be out of compliance. The program is run under complete confidentiality and is aimed at providing a drug-free workplace.

**202.6 Safety Incentive Program**

Each work group in the refinery, including the wharf, has representation on a local safety committee comprised of hourly and management personnel from that work area. Each work area committee determines the safety award level for that area and how the award or awards are to be distributed.

## 203 RESPONSE TEAM

### 203.1 Qualified Individual

A description of the Qualified Individual responsibilities and notification practices is located in Section 104. A listing of all Qualified Individuals is located in Appendix J of this plan.

### 203.2 Incident Command System

The facility Oil Spill Response Team was developed using the Incident Command System. Figure 203.1 - Chevron Oil Spill Response Organization presents an organization chart showing both the internal response team and how it interfaces with the government Unified Command System. This interrelationship is discussed further in Section 203.4.

The Incident Command System (ICS) consists of procedures for controlling personnel, facilities, equipment, and communications. It is implemented at the time an incident occurs and continues until it is no longer required. A central command post functions as the control center for the response effort. The Incident Commander (IC), command staff, and other members of the Unified Command will be stationed at the command post. The Oil Spill Response Center, located on the Long Wharf, will serve as the Initial Command Post. If, due to the size of the incident, more room is required, the Emergency Operations Center (EOC) has been designated for use as a Secondary Command Post and the Refinery Cafeteria is tertiary. The Refinery Cafeteria can be completely outfitted within 12 hours. The Oil Spill Response Center will then serve as a field command post. Parking lots within the refinery will be used as equipment and personnel staging areas (see Figure A-2). Off-site staging areas are discussed in the USCG Area Contingency Plan.

The ICS is a modular system that can be established and expanded depending upon the changing conditions of the incident. For smaller spills, the Incident Commander may provide all the necessary functions for the response. Larger spills may require that all branches of the organization be activated.

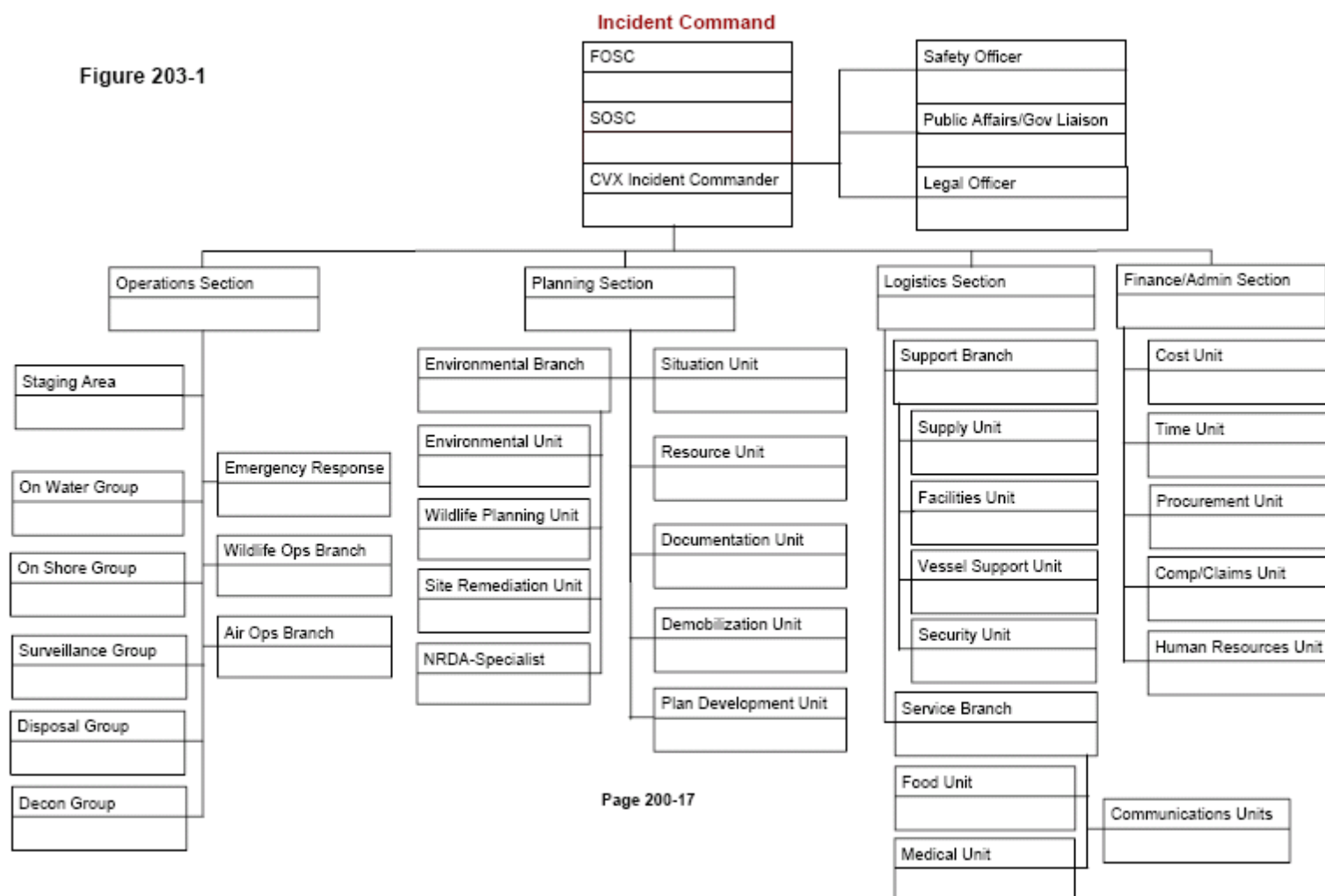
The response organization is basically comprised of facility personnel with support from other Chevron Corporate response resources as necessary (a listing is provided in Appendix B). The delegation of authority in the ICS system is from the top down. When the Incident Commander activates a position, the assigned individual is responsible for accomplishing all corresponding sub functions. If the workload increases, additional manpower will be brought in. This procedure provides for smooth and rapid mobilization and demobilization to meet changing incident requirements.

This flexibility allows the facility to adapt to the incident, while providing a detailed and highly developed response team should it become necessary. The basic roles and responsibilities of each position are described in Section 203.3 below.

The on-call Oil Spill IC is available to respond to the refinery on a 7-day, 24-hour basis. The IC will activate callout of the Spill Response Team/Spill Management Team members as deemed appropriate.



Figure 203-1



### 203.3 Spill Response Team Job Descriptions

A basic list of the positions within the Spill Response Team and the assigned personnel to the team is listed in Figure 203-2. Refer to the Chevron Incident Response guide and Incident Management Handbook, provided under separate cover, for description of the duties and responsibilities of team positions.

One person may assume the responsibilities for several of the positions depending on the size of the incident. Personnel to fulfill these functions are available from the facility Oil Spill Response Team and from Chevron Corporate response resources

### 203.4 Interfacing with the Unified Command

Unified Command at a major marine oil spill will consist of the following: the Federal On-Scene Coordinator (FOSC); the State On-Scene Coordinator (SOSC) and the Chevron IC. Under OPA-90 the FOSC has the ultimate responsibility for directing oil spill response objectives and strategies.

The Chevron IC will be Chevron's main focal point for interface with the Unified Command. Chevron's IC will work together with the FOSC and SOSC to develop proactive consensus building in the setting of response objectives. He/she will also make the liaison and direct communication between key response decision-makers an integral and continuous part of the emergency response process. Chevron's IC will meet with the FOSC and SOSC to jointly:

- determine overall incident objectives,
- select response strategies,
- ensure that joint planning for tactical activities will be accomplished,
- ensure that integrated tactical operations are conducted, and
- make maximum use of all available resources.

By integrating response management in clearly defined units early in the response, consensus and mobilization can be more quickly achieved. This will result in the best possible use of limited resources and reduce duplication of effort. Chevron will, however, retain its own organizational identity, chain of command, and direct control of personnel and resource tasking.

It is the intent of this facility to integrate with State and Federal agencies as shown in Figure 203.2 (Chevron Oil Spill Response Organization). The IC will request the active participation by the U.S. Coast Guard and State of California's Office of Sill Prevention and Response (OSPR) in nearly every aspect of the planning process. This participation should ensure that each organization has appropriate input into the spill response plans. Once the objectives and plans have been established and approved by the Unified Command, the facility expects to direct the Operations Section functions through the Branch Directors and Group/Division Supervisors. As shown in Figure 203.2, the IC may also request advisors from both the U.S. Coast Guard and OSPR to work with the Operations and Planning Section Chiefs.

The Planning Section will prepare an incident action plan and obtain concurrence and signatures for the action plan from the Unified Command. If it is necessary to deviate from the pre-approved plan response, the Chevron IC will make direct contact with the FOSC and SOSC (or their designee) to seek approval for the change prior to any alternative action being taken.

The Public/Government Affairs Representative will be responsible for interfacing with his/her counterparts in the Unified Command, media, and appropriate agencies. The U.S. Coast Guard and OSPR will establish a Joint Information Center for the purpose of having a central point for media contacts and information sharing and verification. This Joint Information Center will act as the control room for outgoing information, and the Public/Government Affairs Representative will either be based in that center, or will maintain open communication lines with the center. The refinery has a secure Media Center with appropriate equipment available for use as a Joint Information Center.

**FIGURE 203-2 – SPILL RESPONSE TEAM**

<b>Location</b>	<b>Title</b>	<b>Name</b>
<b>Command</b>	<b><i>Incident Commander</i></b>	Ayers, Mark
		Greg Bosworth
		Tydingco, Dan
		Kendall, Robert
		Silva, Jack
		Johnson, Matt
		Sylvia, Rich
		Battalion Chief (initial I.C.)
		White, Keith
		(24 hr <i>Qualified Individual</i> )
		Mario Ferrer
		Sylva, Martin
		Tokiwa, Grant
		Jelonek, Mark
		Joseph, Scott
<b>Command Staff</b>	<b><i>Safety Officer</i></b>	Broker, Jim
	<b><i>Field Personnel</i></b>	Beyer, John/ Kidd, Dan
		Bernardo, Gregg/ MSRC
		Gibson, Mike/ Brown, Steve
	<b><i>Public Affairs</i></b>	Canessa, Patricia
		Gill, Walton
		Kulp, Heather
		Casey, Leah
	<b><i>Legal Affairs</i></b>	Lorenz, Joe
		Leonard, David
		Corporate Functional Team
<b>Operations</b>	<b><i>Section Chief</i></b>	Key, Kelly
		Silva, Jack
		CFD Battalion Chiefs (5)
		MSRC
	<b><i>Staging Area Manager</i></b>	MSRC, DP Security, CFD/Brigade
	<b><i>Air Operations</i></b>	Bosworth, Greg
		Tydingco, Dan/ Johnson, Matt
	<b><i>On Water Protection &amp; Recovery Group</i></b>	Zapanta, Don
		Buchmann, Vernon
		Ma, Stan
		MSRC
	<b><i>Shoreline Protection &amp; Recovery Group</i></b>	Reyes, Bernabe
		NRC (Contract Pending)
		Sweet, Phil

Location	Title	Name
		Street, David
		MSRC
	<i>Decontamination Unit</i>	Chevron Fire Department
		Chevron Fire Brigade Personnel
		Richmond Fire
		CCC HAZMAT
	<i>Disposal Group/Waste &amp; Site Cleanup</i>	Thelma Aquino, Gerald Lee, Lisa Duncan
	<i>Wildlife Operations Unit</i>	CDFW/OSPR
		Corporate Functional Team
	<i>Emergency Response Branch</i>	Chevron Fire Department/Chevron Fire Brigade Personnel
<b>Planning</b>	<i>Section Chief</i>	Silva, Jack
		Sylva, Martin
		Tydingco, Dan
	<i>Situation Unit</i>	Potter, Chris
		Kendall, Robert
		Drach, Kyle
	<i>Resource Unit</i>	Singleton, Daryl
		Lopez, Adrian
		Sylvia, Rich
		Colombo, Mary
	<i>Environmental Unit</i>	Diaz, Matt
		Quiroz, Rich
		Kobata, Keith
		Peirce, Scott/ Reed, Greg
		Corp Functional Team/ETC
		CDFW/OSPR
	<i>Documentation Unit</i>	Mendoza, Nicole
		Fielding, Colleen
		Ziegler, Yian
		Un, Sophainy
		Saechao, Koy
		Lopez, Adrian
		Caranto, Antone
		Frost, Kristin

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	<b><i>Waste Management Unit</i></b>	Thelma Aquino, Gerald Lee, Lisa Duncan
	<b><i>Demobilization Unit</i></b>	Corporate Functional Team
<b>Logistics</b>	<b><i>Section Chief</i></b>	Hardin, Steve
		Bennett, Larry
		MSRC
	<b><i>Service Branch</i></b>	
	<b><i>Communications Unit</i></b>	Steve Sherry (Motorola)/ <b>Smith, Mark/ Campos, Rudy/ Wong, Peter,</b> MSRC
		Verizon
	<b><i>Medical Unit</i></b>	Tang, Brian (MD)
		<b>Romano, Ashley (PA)</b>
		Chevron Fire Department
		Care OnSite
		Corp. Medical
	<b><i>Food Unit</i></b>	<b>Chartrand, Jonathon</b>
		Facilities Functional Team
	<b><i>Support Branch</i></b>	Million, Dave / <b>Street, Dave</b>
	<b><i>Supply Unit</i></b>	Minoli, Dave/ <b>Thomas, Brenda</b>
		Castellanoz, Jose/ Kahl, Mike
	<b><i>Facilities</i></b>	Iverson, Ivy / Raeder, Chuck/ Corn, William
	<b><i>Security Unit</i></b>	Lawrence, Scott
		Chevron Fire Department
		DP Security
		Global Security
	<b><i>Vessel Support Unit</i></b>	Chevron Shipping Company
	<b><i>Ground Support Unit</i></b>	Klein, Mike/ <b>Smith, Joe</b>
		RTD
<b>Finance</b>	<b><i>Section Chief</i></b>	Dea, Stephen/ <b>Lewis, Amanda</b>
	<b><i>Procurement Branch</i></b>	Bennett, Larry
	<b><i>Compensation/Claims Unit</i></b>	<b>Steele, Justin</b> and HR Group
	<b><i>Cost Unit and Time Unit</i></b>	<b>Stack, Meagan/ Lewis, Amanda</b>
		MSRC



## 204 RESPONSE ACTIVITIES

### 204.1 RESPONSE STRATEGY

The Richmond Refinery's Spill Response Plan is based on the priorities and strategies found in the San Francisco Bay and Delta Area Contingency Plan (ACP). Supporting information and tactics may be found in [204.8 of this section](#).

#### \* Immediate Response Phase

Details are available in Section 3000 and Geographic Response Areas of the ACP.

Chevron has identified Immediate Response Strategies for shoreline areas at risk.

Zone 1 – RLW and Causeway

Zone 2 – Western Shoreline areas

Zone 3 – Eastern Shoreline of (Castro Creek and Cove)

Initial strategies and resource requirements have been developed for each of these "Response Zones." These are described in [204.8 of this section](#).

#### \* Containment and Recovery Phase

Details of containment and recovery of spilled material can be found in Section 3000 the ACP. Additional information on the containment and recovery strategies for the area at risk (72 hour trajectory analysis) is extracted from the ACP and included in Section 206 of this Plan. Refer to the Area Contingency Plan Section 9000 and the Geographic Response Plans (Section 9800) for additional information.

#### \* Sensitive Area Protection Phase

Details are available in Section 9800 of the ACP. Additional information on the protection strategies for the area at risk (72 hour trajectory analysis) is extracted from the San Francisco Area Contingency Plan and included in Section 206 of this plan. Refer to the Area Contingency Plan Section 9000 and the Geographic Response Plans (Section 9800) for additional information.

#### \* Shoreline Cleanup Phase

Details are available in Section 3000 of the ACP. Additional information on the cleanup strategies for the area at risk (72 hour trajectory analysis) is extracted from the San Francisco Area Contingency Plan and included in Section 206 of this plan. Refer to the Area Contingency Plan Section 9000 and the Geographic Response Plans (Section 9800) for additional information.

A description of bioremediation techniques (including a decision guide, documentation requirements and details on approval process) are available in Sections 1600, 3000, and 4000 of the ACP.

## 204.2 Assessment

### 204.2.1 Visual Observation

The Incident Commander will immediately send personnel to visually assess the incident to determine spill size, type, direction and speed.

As a result of the infinite number of combinations of types and environmental conditions, no two spills will be identical. Each spill must be evaluated independently on the basis of incident-specific conditions. This section deals with assessment procedures for immediate response actions. In all cases the safety of the response team will have the highest priority.

The assessment process includes the following sequence of steps:

1. Evaluate spill type and report any observed safety hazard to Chevron personnel, contractors and the general public. First on scene will conduct site characterization including air monitoring.
2. Evaluate the properties of the spilled oil as they influence movement, recovery and environmental effects.
3. Estimate spill size and movement.
4. Evaluate level of Spill Response Plan activation including whether containment and recovery can be achieved with available resources
5. Recommend response priorities.
6. Evaluate if the spill is of suspicious origin.

### 204.2.2 Spill Type

The type of oil spilled can be identified from cargo information and/or by appearance and source. A complete listing of materials transferred to/from the wharf is maintained in the Wharf Operations Manual. At the scene, this information can be found on the Cargo Information Card (CIC). This card is posted in a visible location near the berth office whenever cargo is being transferred. Additional information (especially if the spill is of suspicious origin) can also be obtained by laboratory analysis.

Appendix A (Table A-1) lists tanks within the refinery including identification, contents and capacity.

### 204.2.3 Safety Hazards & Fire/Explosion

Under certain circumstances, spilled oil may present a fire/explosion hazard. Until otherwise established, all spills should be considered as potential fire/explosion hazards. This is particularly true for spills involving volatile products all including Group I oils.

Any spills involving confined airspace in which vapors may accumulate (shipboard, tankage, machine spaces, inside structures, under docks, storm drains, etc.) should initially be considered as potentially explosive situations. The Chevron Incident Commander, in consultation with the Chevron Fire Department, will direct response operations where explosive vapors maybe present.

Chevron's Wharf Operations Manual provides Safety Data Sheets (**SDS**) for all materials handled. They provide detailed information on hazards involved in handling the cargo. This information also can be obtained from the Cargo Information Card (CIC). This information should be reviewed whenever a spill response is required to ensure the safety of all personnel.

### **204.2.4 Evaluate the Properties of the Spilled Oil**

Appendix A has a complete listing of the wharf lines and the “Oil Groups” transferred through each one. These “Oil Groups” refer to “fresh” material and have been established for planning purposes only (see Figure 400-1 for definitions). Once spilled, oil is subject to a variety of processes which may alter its fate and movement in the environment, and the types of appropriate response procedures.

### **204.2.5 Estimate Spill Size and Movement**

An estimate of the total volume of the spill is required by state agencies. Spill volume also helps determine the level of response plan activation. The following quick methods can be used to provide working approximations.

#### Pipeline/Hose Loss

The volume of oil lost during a barge unloading or pipeline transfer can be estimated from the pumping rate, the duration of pumping, and static line and hose loss estimates. Appendix A presents capacities and pumping rates for RLW pipelines to be used in determining estimated spill sizes.

#### Oil-on-water

A working estimate of the volume of a spill on the water surface can be made by visual assessment of its surface area appearance and thickness. Slick dimensions should be estimated from the air. See the Oil Spill Volume Estimator (Figure 204 -1) for estimating spilled oil volumes on water.

#### Spill Movement

Procedures and environmental data useful in estimation of spill movement are provided in Appendix H. A trajectory analysis based on the worst-case spill volume has been prepared. The results of the analysis are provided in Section 303 of this plan. Visual observation and local hydrological knowledge is the best means of predicting spill oil movement on water. The refinery also has the ability of utilizing oil trajectory software (OilMap) from a variety of sources to include its Corporate Functional Team and contractors.

## **204.3 Group V Oils**

### **204.3.1 Group V - Behavior**

Group V oils exhibit sufficiently high specific gravity that will sink when their weight exceeds that of the ambient water mass. In many cases, Group V oils will sink when fresh and most will sink when their weight increases due to weathering. Group V oils that sink below the surface may not sink completely to the bottom. Again, the specific gravity differences are critical. Some water bodies, particularly estuaries, are thermally and density (salinity) stratified. An oil that is heavier than water at the surface may sink until it reaches a layer of higher density, and remain at that level. This phenomena may occur in San Francisco Bay in response to warmer surface layers, and along the fresh water/salt water wedge (fresh river water flowing into the Bay can form a lighter layer on top of the underlying salt water in certain portions of the Bay). An additional estuarine phenomenon that can influence the fate and movement of heavier oil in the water column is related to turbidity. Oil can adhere to suspended sediment in the water column

or be trapped by a process known as flocculation. In these cases, the oil sediment combination may be heavy enough to sink to the bottom and behave as bottom sediment.

### **204.3.2 Group V - Equipment**

As discussed in Section 403, the OSPR Regulations stipulate that all facilities that transfer Group V Oil, must identify equipment which can be used to monitor and/or recover Group V Oil. Because Group V Oils are transferred across the Long Wharf, Chevron must address this requirement.

While no reasonable technology currently exists for a Group V response in the San Francisco Bay, Chevron has identified several dredging companies which may be able to provide assistance in the event of a spill. Equipment lists are provided in Appendix C for Dutra Dredging Company. In addition to the dredges, pumps, detection devices (fathometers with frequencies high enough to identify submerged oil), silt curtains may be made available upon demand. These companies do not ordinarily maintain silt curtains as part of their equipment inventory, however, they can be ordered on demand. However, in a hydrologic ally dynamic environment such as San Francisco Bay, wide and rapid dispersion of a submerged oil spill would be expected. Attempts to recover oil from large areas using pumping or dredging techniques may be considered impractical, both in terms of feasibility and potential associated environmental damage.

### **204.3.3 Group V - Movement Prediction**

Movement of oil that has sunk below the surface may be subject to movement in directions different from those associated with floating oil. In all cases, the effect of wind is reduced or eliminated. Movement patterns would be similar to water mass movements without wind influence. If oil remains suspended midway in the water column, it is possible that it may ultimately be deposited on a shoreline.

Oil that reaches the bottom and adheres to or is incorporated in the bottom sediment will be subject to forces that control bottom sediment movement. Bottom drifter studies in San Francisco Bay have indicated a net inland movement in some sections of the Bay. These studies, conducted by the U.S. Geological Survey, may be useful in emergency spill movement predictions. The studies include:

- Conomos, T.J., et al., 1970. Movement of Seabed Drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean: A preliminary report, U.S. Geological Survey Circular 637B, 8 pp.
- Conomos, T.J., et al., 1971. Drift of surface and near bottom waters of the San Francisco Bay System: March 1970 through April 1972, U.S. Geological Survey Open File Map.

### **204.3.4 Group V - Monitoring**

No standard procedures for the monitoring of submerged oils are known to exist. However, several oceanographic hydrographic methods should be appropriate for use. These methods include the following:

- Geophysical Methods - Detection of oil suspended in the water column or just above the bottom should be detectable with commonly available depth sounding/fish finding sonar. Oil adhering to the bottom may be detectable through the use of more sensitive hydrographic depth sounding

equipment (such as the Precision Depth Recorded-PDR). With an experienced operator, equipment of this type allows differentiation of bottom characteristics.

**Water Column and Bottom Sampling Devices** - Numerous types of grab samplers, dredge samplers, gravity coring devices and water samplers are available for direct physical sampling of water column and bottom characteristics. Use of these techniques can be time consuming, and their application may be most appropriate for confirmation of the electronic tracking devices described above.

**Divers** - In some cases, it may be practical to conduct direct visual examination of areas using divers. However, poor visibility and frequently dangerous working conditions limit use of divers in San Francisco Bay.

Should a spill incident result in oil sinking, it is important that some form of monitoring be initiated as soon as possible (while the location of the oil is still known). Monitoring should continue until the oil is dissipated naturally, strands, or is otherwise recovered.

#### **204.4 Volunteers**

All volunteers will be referred to the State of California's Office of Spill Prevention and Response and/or other appropriate volunteer organizations equipped to use them. Chevron may choose to utilize volunteers for pre-cleaning of beaches (before oil has grounded). It is, however, the policy of Chevron not to place volunteers in positions that would require training and/or exposure to hazardous environments (i.e., exclusion zone).

#### **204.5 Site Security**

Access to the Richmond Refinery is limited by the use of perimeter fence and security guards posted at gate entrances. Employees and contractor professionals are issued personal pass badges and vehicle pass badges to gain access to the refinery. The management of access to spill sites outside the refinery boundary is provided by individual Security Branch Directors or contractor security guards in the Logistics Section of the Spill Management Team.

#### **204.6 Injury Emergencies**

As part of Chevron's Fire Brigade at least one Emergency Medical Technician (EMT) is available in the refinery on a 24-hour-a-day basis. EMTs can be called by dialing the facility's emergency number (X-555) to administer First Aid to victims of injury or sudden illness. The EMTs will then determine what further emergency medical services are required. The refinery has an on-site medical clinic staffed with a Physician's Assistant during normal working hours.

#### **204.7 Fire Equipment**

Fire equipment maintained at the Long Wharf is described in Section A of the Wharf Operations Manual and is summarized below:

A. A 12-inch fire water line throughout the entire wharf is available at all times with a standing pressure of approximately 145 psig. Berth 4 is equipped with a 10-inch fire water line supported by a diesel pump to maintain pressure. An emergency 125-hp electric fire pump located at the pad can be used to boost the fire water line pressure to 180 psig.

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B. An auto-start, diesel-powered fire water booster pump is located at the base of the Berth #4 driveway and takes suction directly from the bay when necessary to maintain 180 psig on the main fire water header. Fire water manifolds, quick-attack hose boxes, and individual hose hydrants are regularly spaced along the wharf.

C. All cargo-handling berths are provided with stores of fire-fighting foam. The on-site foam is AFFF (aqueous film-forming foam), suitable for oil or polar-solvent type fires. Foam protection for Berth No.1 is provided by a 250-gallon foam tank located underneath the berth for the monitor on top of the berth, two 55-gallon foam tanks for the monitor at the stile over pipeway east of the berth, and a 60-gallon foam tank at the south stairway connected to a water hose. Foam is available in berths 2, 3, 4, 9, and 11 via foam skids (two in Berths 2, 3 and 4; one each in berths 9 and 11).

D. Each personnel shelter is equipped with a dry chemical fire extinguisher, located near the door of the individual shelter.

E. The refinery has its own Fire Department, and is available for use at the Long Wharf. Call-out is via refinery radio, "hotline" dedicated telephone, or standard refinery telephone by dialing 555. Richmond Municipal Fire Dept. is available as mutual aid, and is contacted via request through the Chevron Fire Department Dispatcher at 242-2302 or 242-4200.

Figure 204-1 Oil Spill Volume Estimator

## OIL SPILL VOLUME ESTIMATION

Formula:  $V = T \times A \times C$

V = Estimated volume in ounces, gallons, or barrels

T = Estimated oil thickness in millimeters (from table below)

A = Estimated area of oil in square feet, square yards or square miles

C = Constant (from table below)

Thickness in Millimeters (T): Estimate oil thickness based on appearance of oil on the water. Appearance will vary with oil and environmental conditions. If overall slick appearance varies significantly, estimate percentage of each thickness observed (e.g. 60% rainbow & 40% silver sheen).

Oil Appearance on Water	Approximate Thickness (mm)
Barely Visible	0.00004
Silver Sheen	0.0001
Slight Rainbow	0.00015
Bright Rainbow	0.0003
Dull Colors	0.001
Yellowish Brown	0.01
Light Brown	0.1
Dark Brown or Black	> 0.1

Area (A): Estimate the length and width of the slick. Convert these dimensions into the same unit of measurement (feet, yards, or miles) and multiply together to get square feet, square yards, or square miles.

Constant (C): Using the table below, move right from the unit measurement you used for determining the square area to the column with the volume units you want the answer to be in. Select that constant at the intersection for use in the formula.

Units	Ounces	Gallons	Barrels
Square Feet	3.14	0.0245	0.00058
Square Yards	28.3	0.221	0.0053
Square Miles	N/A	684,000	16,300

Note: 1 mile = 1,760 yards or 5,280 feet

Example: Thickness = 60% Bright Rainbow & 40% Silver Sheen

Slick Area =  $\frac{1}{2}$  mile x 40 feet = 2,640 feet x 40 feet = 105,600 square feet

$V = T \times A \times C$  (want volume in gallons)

Rainbow Sheen:  $T = 0.0003$  (chart)     $A = 105,600$  square feet     $C = 0.0245$  (chart)

Silver Sheen:  $T = 0.0001$  (chart)     $A = 105,600$  square feet     $C = 0.0245$  (chart)

Bright Rainbow Sheen Volume     $0.0003 \times 105,600 \times 0.0245 = 0.7762$      $0.7762 \times 60\% = 0.4657$

Silver Sheen Volume     $0.0001 \times 105,600 \times 0.0245 = 0.2587$      $0.2587 \times 40\% = 0.1035$

Estimated Spill Volume:  $0.4657 + 0.1035 = \mathbf{0.5692}$  gallons (just over  $\frac{1}{2}$  gallon)



**204.8 Response Zones****RESPONSE STRATEGY – ZONE 1 – LONG WHARF AND BERTHS****RESPONSE OBJECTIVES:**

1. Safety of Personnel on Wharf if spill blocks access to shore
2. Containment of initial spill at dock, against wharf, vessel, or causeway
3. Diversion of spill or recovery site
4. Protection of Sensitive Environmental sites
5. Recovery of surface oil
6. Containment and Recovery of Open Water material

Resource	Location	Resources	
		Assignment	ETA
BOOM			
Chevron Boom Trailer – 1000 ft.	Long Wharf - Berth 1		
Chevron Petro- Barrier	Permanent under Long Wharf		
Chevron Boom - 1500 ft.	Response Boat Orange Boat (CVX 1) A&B Berth		
Chevron Boom - 700 ft.	Response Boat Blue Boat (CVX 1) A&B Berth		
Chevron Boom - 700 ft.	Orange Boat (CVX 1) Green Boat (CVX 1) A&B Berth		
RESPONSE VESSELS			
Chevron Response Boat	Long Wharf A&B Berth		
MSRC Fast Response Vessels	Crockett Marina		
	Martinez Marina		
MSRC RAIDER I Workboat	Richmond Inner Harbor		
MSRC RAIDER III Workboat	Richmond Inner Harbor		
Foss Environmental Shore Cleanup	Alameda		
Helicopter		Overflight	

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Resource	Location	Resources	
		Assignment	ETA
SPILL RECOVERY			
MSRC SPILL SPOILER II Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
MSRC PACIFIC RESPONDER Responder Class Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
MSRC 451 Oil Spill Response Barge (OSRB)	Richmond Inner Harbor		
RECOVERY 1 Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
SPILL CHASER Fast Response Vessel (FRV)	Richmond Inner Harbor		
Vacuum Trucks	Chevron Refinery		
Labor	Transfield Services		
FIRE FIGHTING EQUIPMENT			
Chevron Fire Department			

#### RESPONSE STRATEGY SUMMARY

Once the source of the spill is secure, containment and recovery of the spilled oil is the priority. Deploy major recovery vessels, boom-towing vessels and other skimmers to intercept and contain the oil. The type of boom to be deployed will depend on local conditions, including sea state, tides, currents and wind. To be most effective, booming on open water must be done as soon as possible after a spill.

The information presented is a general description of some basic methods and approach for containment and recovery of the spilled oil. Actual response conditions and impact would guide the selection between the various strategies. The response contractor should provide valuable knowledge for recommending the most effective technique for current conditions.

RESPONSE STRATEGY – ZONE 2 – CHEVRON WEST SHORELINE

## RESPONSE OBJECTIVES:

1. Initial containment on land
2. Diversion of spill into existing drainage and containment
3. Deployment of boom at shoreline outfall
4. Protection of Sensitive Environmental sites
5. Recovery of oil from collection sites

Resource	Location	SMALL SPILL	
		Assignment	ETA
BOOM			
Chevron Boom - 1500 ft.	Response Boat Orange Boat (CVX 1) A&B Berth		
Chevron Boom - 700 ft.	Response Boat Blue Boat (CVX 1) A&B Berth		
Chevron Boom - 700 ft.	Orange Boat (CVX 1) Green Boat (CVX 1) A&B Berth		
Chevron Boom Trailer – 1000 ft.	Long Wharf - Berth 1		
RESPONSE EQUIPMENT			
Backhoe	Geobel		
Bulldozer	Geobel		
Dump Trucks	Geobel		
RESPONSE VESSELS			
Chevron Response Boat	Long Wharf A&B Berth		
	Whaler w/ trailer		
	Long Wharf Work Boats		
MSRC Fast Response Vessels	Crockett Marina		
	Martinez Marina		
MSRC RAIDER I Workboat	Richmond Inner Harbor		
MSRC RAIDER III Workboat	Richmond Inner Harbor		
Foss Environmental Shore Cleanup	Alameda		
Helicopter		Overflight	

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Resource	Location	SMALL SPILL	
		Assignment	ETA
SPILL RECOVERY			
MSRC SPILL SPOILER II Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
MSRC PACIFIC RESPONDER Responder Class Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
MSRC 451 Oil Spill Response Barge (OSRB)	Richmond Inner Harbor		
RECOVERY 1 Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
SPILL CHASER Fast Response Vessel (FRV)	Richmond Inner Harbor		
Vacuum Trucks	Chevron Refinery		
Labor	Transfield Services		
FIRE FIGHTING EQUIPMENT			
Chevron Fire Department			

#### RESPONSE STRATEGY SUMMARY

Once the source of the spill is secure, containment and recovery of the spilled oil is the priority. Deploy major recovery vessels, boom-towing vessels and other skimmers to intercept and contain the oil. The type of boom to be deployed will depend on local conditions, including sea state, tides, currents and wind. To be most effective, booming on open water must be done as soon as possible after a spill.

The information presented is a general description of some basic methods and approach for containment and recovery of the spilled oil. Actual response conditions and impact would guide the selection between the various strategies. The response contractor should provide valuable knowledge for recommending the most effective technique for current conditions.

RESPONSE STRATEGY – ZONE 3 – CHEVRON EAST SHORELINE

## RESPONSE OBJECTIVES:

1. Initial containment on land
2. Diversion of spill into existing drainage and containment
3. Deployment of boom at shoreline outfall
4. Protection of Sensitive Environmental sites
5. Recovery of oil from collection sites

Resource	Location	SMALL SPILL	
		Assignment	ETA
BOOM			
Chevron Boom - 1500 ft.	Response Boat Orange Boat (CVX 1) A&B Berth		
Chevron Boom - 700 ft.	Response Boat Blue Boat (CVX 1) A&B Berth		
Chevron Boom - 700 ft.	Orange Boat (CVX 1) Green Boat (CVX 1) A&B Berth		
Chevron Boom Trailer – 1000 ft.	Long Wharf - Berth 1		
RESPONSE EQUIPMENT			
Backhoe	Geobel		
Bulldozer	Geobel		
Dump Trucks	Geobel		
RESPONSE VESSELS			
Chevron Response Boat	Long Wharf A&B Berth		
	Whaler w/ trailer		
	Long Wharf Work Boats		
MSRC Fast Response Vessels	Crockett Marina		
	Martinez Marina		
MSRC RAIDER I Workboat	Richmond Inner Harbor		
MSRC RAIDER III Workboat	Richmond Inner Harbor		
Foss Environmental Shore Cleanup	Alameda		
Helicopter		Overflight	

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Resource	Location	SMALL SPILL	
		Assignment	ETA
SPILL RECOVERY			
MSRC SPILL SPOILER II Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
MSRC PACIFIC RESPONDER Responder Class Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
MSRC 451 Oil Spill Response Barge (OSRB)	Richmond Inner Harbor		
RECOVERY 1 Oil Spill Response Vessel (OSRV)	Richmond Inner Harbor		
SPILL CHASER Fast Response Vessel (FRV)	Richmond Inner Harbor		
Vacuum Trucks	Chevron Refinery		
Labor	Transfield Services		
FIRE FIGHTING EQUIPMENT			
Chevron Fire Department			

**RESPONSE STRATEGY SUMMARY**

Once the source of the spill is secure, containment and recovery of the spilled oil is the priority. Deploy major recovery vessels, boom-towing vessels and other skimmers to intercept and contain the oil. The type of boom to be deployed will depend on local conditions, including sea state, tides, currents and wind. To be most effective, booming on open water must be done as soon as possible after a spill.

The information presented is a general description of some basic methods and approach for containment and recovery of the spilled oil. Actual response conditions and impact would guide the selection between the various strategies. The response contractor should provide valuable knowledge for recommending the most effective technique for current conditions.

**205.1 MANPOWER AND EQUIPMENT**

Implementation of this Spill Response Plan for a major release depends upon the availability of many types of services, equipment, and materials within Chevron and from oil spill response organizations and private contractors. Marine Spill Response Corporation will provide the major source of emergency response services. Other contract OSRO's are available and would be called in to assist as needed.

**205.2 FACILITY RESOURCES**

Spill response resources located at the facility are listed in Appendix C.

Testing forms are located in Appendix A, page A.4-3

Boom deployment from wharf personnel is expected to commence within 15 minutes after the spill has been detected, with 700 feet deployed within a half hour and at least 1,400 feet deployed within one hour. Seven sections of containment boom (approximately 3,500 feet) are installed permanently beneath the Long Wharf to allow rapid containment of a ship by connecting sections of portable boom to each end of the permanent sections. Boom is stored on the wharf in a manner to provide for its immediate deployment with a spill response boat.

**205.3 SPILL RESPONSE CONTRACTOR RESOURCES**

Supporting services would be mobilized to meet response requirements from the established subcontractor listing and through our primary OSRO. Contact numbers are provided in Section 204. Key subcontractors identified for service by Chevron include the following:

<b>Prime OSRO</b>	<b>Sub-Contractor</b>	<b>Service</b>
MSRC		On-Water Protection & Recovery; shoreline cleanup
	Dutra Dredging	- Group V Oil Cleanup

**205.3.1 Clean Bay, Inc.**

Clean Bay and associated subcontractors were consolidated into Marine Spill Response Corporation (MSRC) in early 2003. All "legacy" Clean Bay response equipment became part of MSRC at that time and became available to members of MSRC.

**205.3.2 Marine Spill Response Corporation (MSRC)**

MSRC is the largest U.S. co-operative oil spill response organization for coastal and offshore oil spills. MSRC will assist in major responses that exceed the capabilities of local response organizations. Chevron is a major member of MSRC co-op and has access to MSRC's full capabilities. MSRC has five regional response centers and about 20 pre-positioned sites where equipment, vessels and personnel will be located. Each regional response center is capable of responding to a 30,000-ton (216,000-bbl.) spill. A listing of major MSRC equipment is included in Appendix C. Chevron also has access to MSRC's comprehensive nation-wide network of additional response resources.

Nearly all oil spills are minor in size and these spills typically are controlled and cleaned up by the facility. MSRC is called to respond in those relatively few instances when the facility determines that additional control, containment and/or cleanup resources are needed. The extent of their response varies from consultation to the mobilization of all of MSRC resources. If circumstances warrant, MSRC will be called into operation almost simultaneously with the facility's response organization. MSRC provides the personnel required to implement an established procedure for response to oil spills 24 hours per day, 365 days per year. MSRC equipment is important in the initial phase of spill control and cleanup will be dispatched within 1 hour from storage locations around the San Francisco Bay. The first equipment will arrive on site within 1.5 hours. The equipment is operated and supervised by personnel trained in oil spill cleanup.

If a spill requires more resources than MSRC has in the area, the MSRC California Region Vice President will act under the mutual assistance agreement with other OSRO's. Approximately one-third of the resources of those OSROs are normally available. MSRC's suppliers and contractors also have the ability to bring substantial additional equipment to the area.

MSRC's primary responsibility will be containment and cleanup of the spill on water as a major extension of the Chevron Oil Spill Response Team's capabilities. MSRC also will be called upon for the protection of coastal resources and environmentally sensitive areas. Shoreline cleanup will be handled by sub-contractors through their written service agreement with MSRC.

MSRC has confirmed availability of resources for aerial oil spill tracking through contract or other approved means per 33 CFR 154.1045(j)(4). A list of these resources can be found in Appendix C.

**205.3.3 Chevron Company-Wide Resources**

As necessary, Chevron Company-wide internal and external resources would be alerted and activated. These resources are described in Appendix B.

**205.3.4 Government Agencies**

Under certain circumstances equipment and expertise from the U.S. Coast Guard and the U.S. Navy may be available for use on spills if requested by the Federal On-Scene Coordinator. These resources are summarized in the San Francisco Bay and Delta Area Contingency Plan. The California Conservation Corps has received the appropriate HAZWOPER training and could be used to augment contract resources for shoreline cleanup.

**205.3.5 Contractors and Commercial Suppliers**

Contract personnel will in most cases make up the major portion of the manpower assigned to a spill. Contractors responding to spill incidents must have the appropriate HAZWOPER training, as specified in 29 CFR 1910.120 and Title 8, California Code of Regulations (CCR) Section 5192.

The following subsections present the general types of contractors and equipment available to Chevron either directly or through MSRC.



**Marine Contractors and Equipment**

MSRC has standing contracts with contractors needed to assist in cleanup operations. They include: powerboats, helicopters, barges, vacuum trucks, laborers, marine salvage equipment, other OSROs, and all refinery mutual aid services.

Supplemental sources of manpower and equipment available to Chevron (including phone numbers) are included in Appendix B.

**Shoreline Cleanup Contractors**

MSRC employs a network of sub-contractors to provide manpower and resources to manage and conduct a shoreline cleanup.

Supplemental sources of manpower and equipment available to Chevron (including phone numbers) are included in Figure 201-5 in Section 201 of this plan.

**Service Suppliers**

Personnel support for a major spill response process includes a variety of services. Sources of response support may include aerial and commercial photographers, laboratory services, caterers, wholesale sandwiches, water, and sanitation services. Many of these resources can be found in local telephone directories or internet web pages.

**205.3.6 Consultants**

Chevron has identified a number of consulting companies and experts with contact names and phone numbers who could be immediately available to advise on spill response techniques and issues. These consultants can be accessed directly or through Chevron Corporate resources (see Appendix B).

**205.4 Responding to a Worst Case Discharge (WCD)**

The Worst Case Discharge for the Richmond Refinery is defined in Section 400 of this plan. Should a spill of this size occur, Chevron will mobilize internal and external resources to quickly contain the material and minimize community, commercial, cultural, and environmental impacts.

Once a spill is detected, Chevron will first assess the situation and work to identify and control the source. Equipment will be deployed to execute booming and/or containment strategies if it is deemed safe to do so. Operations will gather weather, wind, and tide data to predict initial oil movement and behavior. An appropriate booming strategy will be chosen based off of this data. Operations will initiate air monitoring on the wharf in the vicinity of the spill. The onsite Fire Department will be notified and respond to the scene. Operations and Fire Department personnel will work to determine the amount of product spilled, the type of product and its properties (SDS), equipment and personnel to be deployed, and the appropriate booming strategy. Ensuring the safety of personnel will be the primary objective in the response at all times. A list of available refinery resources can be found in Appendix C.

The refinery would in turn, mobilize the internal Spill Management Team identified in section 203 to staff the Incident Command System (ICS) organization for the response. Federal, State, and Local Government representatives will be integrated into the response to create a Unified Command (UC).

For a WCD event, Chevron will request resources from MSRC. MSRC will mobilize resources as described in section 205.3.2 above to respond to a WCD event. A list of MSRC resources can be found in Appendix C.

All resources will be requested, deployed, and managed using the Proactive Phase of the ICS planning cycle under the direction of the UC, until the response and demobilization is complete.

## 206 ENVIRONMENTALLY SENSITIVE SITES/RESOURCES AT RISK

### 206.1 Area Contingency Plan Sensitive Sites

This section summarizes the environmentally sensitive sites that may be impacted from the Reasonable Worst Case Discharge (RWCD) spill at the facility. The list reflects the spill trajectory developed by the Offsite Consequence Analysis (OCA) located in Section 303. This is to be used as only a guide and should be adjusted with consideration of actual conditions and reported spill locations.

Information on the individual sites is provided from the Area Contingency Plan (ACP). This information should be used for initial planning of operations for protection and recovery of a spill. The latest copy of the ACP should be consulted to ensure the most recent updates are being considered.

Table 206-1 provides a listing of the environmental sensitive sites based on the OCA 72-hour trajectory from a 35,135-bbl. Crude oil spill. Weather conditions were based on typical winter seasonal parameters and wind at 5-10 kts from the SW to SE.

The ACP sites are listed by the time of initial impact in the trajectory. This should only be used as an initial guide for actual response. This list may not be complete. Environmentally sensitive resources should be identified in conjunction with regulatory agencies for each incident.

Following Table 206-1, excerpts from the ACP for Geographic Response Plans for areas identified at risk by the OCA:

GRP 4 – Central San Francisco Bay

GRP 5 – San Pablo Bay

Each GRP provides a key map of the area and a listing of resources required for the respective strategy. Refer to the ACP for the most current resources and strategy description.

### 206.2 California State Lands Commission (CSLC) Lease Mitigation Measures

For compliance with CSLC Richmond Long Wharf Lease Agreement Mitigation Monitoring Plan, the following mitigation measures are to be implemented in the event of a spill or release.

#### 206.2.1 Post Event Notification

In compliance with the Richmond Long Wharf **May 2009 CSLC Lease Mitigation Measure BIO6e**, Chevron will follow OSPR recommendations for appropriate remedial actions that will minimize damage to natural resources. Within 30 days **following the spill event**, Chevron will provide a post event notification to the CSLC **Land Management and Environmental Planning and Management Divisions** regarding OSPR and Chevron's **rationale for using employed** environmental response techniques.

### 206.2.2 Food Banks

In accordance with CS LC Lease Mitigation Measure EJ1, if subsistence fishing activities are anticipated to be disrupted more than 2 days in a given area as determined by DFG/OSPR due to a spill event associated with the Richmond Long Wharf, **from a vessel traveling to or from the wharf, moored at its wharf or related in any way to the wharf**, the associated food bank providers listed below would be contacted by Chevron and food or monetary donations made. The Unified Command's Public Affairs Officer & Liaison Officer working in conjunction with the Finance Section Chief/Claims Unit will contact the designated food bank to establish an expeditious donation process. **In the event the spill occurs along the Coast of California and affects a region of the state not covered by these food banks, then the closest food bank to the geographic area impacted will be contacted.**

- Second Harvest Food Bank of Santa Clara and San Mateo Counties
- Marin Community Food Bank
- San Francisco Food Bank
- Alameda County Community Food Bank
- Second Harvest Food Bank of Santa Cruz and San Benito Counties
- Redwood Empire Food Bank

### 206.2.3 Affected Marinas, Launch Ramps, and Fishing Access Points

In accordance with CS LC Lease Agreement Mitigation Measure FSH9b, as part of the Incident Command System (ICS) or UC Claims Process, Chevron is responsible for **ensuring that** notifications **are posted** at spill sites and nearby affected marinas, launch ramps and fishing access points, **to warn fishing interests of locations of contaminated sites. Posted notices shall be in, at a minimum, English, Vietnamese, Cantonese, and Spanish and be posted in areas most likely to be seen by fishing interests.** Chevron Richmond Refinery's Emergency Response Coordinator or Incident Commander will conduct due diligence to ensure these notification requirements are being implemented during an emergency response events associated with spills being managed by Chevron Richmond Refinery Spill Management Team. Documentation of this effort includes a list of locations where signs were posted, and date of posting.

### 206.2.4 Incident Command Claims Process

In accordance with Lease Agreement Mitigation Measure FSH9c, Chevron follows the Incident Command System claims process as outlined in the roles and responsibilities of the Finance/Administration Section. Within Chevron, the Corporate Claims Department would consult with Legal and Public, Government, Political Affairs within the Unified Command to structure an expedited claims process in accordance to existing laws and regulations. Basic guidelines for typical claims events associated with managed by Chevron spills are as follows:

1. Spill affecting commercial marina:
  - Claimant calls 1-800 number established by the Unified Command,
  - Within 24-48 hours, Chevron will initiate an investigation of all reports of damage claims caused by a spill.
  - Chevron will make restitution as appropriate or as expeditiously as possible.
2. Spill affecting commercial fishing interests:
  - Claimant calls established 1-800 number as above
  - Claimant would demonstrate loss of revenue due to fishing restrictions;

- If required, Chevron would financially compensate for damage or loss of revenue.

3. Spill affecting private residences / shoreline property:

- Within 24-48 hours, Chevron will initiate an investigation of all reports of damage claims caused by a spill.

### 206.2.5 Post-Event Evaluation

Presently, there is no standardized or required process specified in the National Contingency Plan, Regional Response Plan or Area Contingency Plan and associated response teams that requires a post event evaluation of mitigation measure effectiveness unless specifically requested by USCG as part of a follow up investigation to a spill.

Chevron **will implement** its own post event root cause analysis and lessons learned procedures, through **its** existing Refinery Loss Prevention System (LPS) program. The LPS system mandates that a Near Loss Investigation (NLI), in the event of a near miss, or a Loss Investigation (LI) be conducted for any event that may result or actually resulted in an unintended or accidental release to the environment, operational error, emergency situation, or other condition that is outside of normal operational limits.

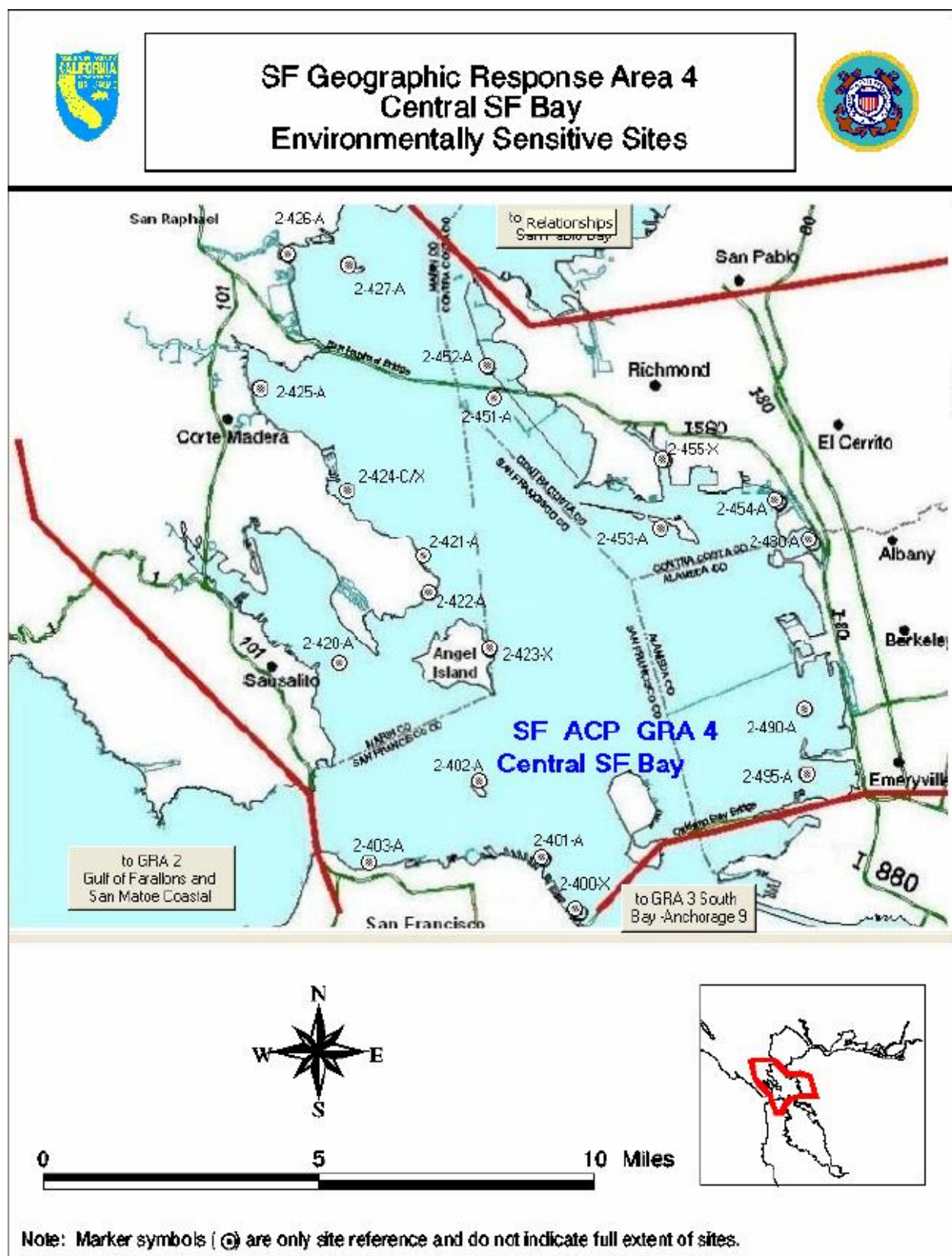
The Chevron Loss Prevention System is implemented at all of Chevron owned refineries worldwide and is an adopted standard practice as of January 1, 2009. Further, Chevron's procedures for Incident Investigations **as outlined** in Refinery Instruction (RI)371, Near Loss, Event Reporting, and Incident Investigation, **mandate that** a release of greater than 1 bbl of product to water is classified as a Level 3a event, and a release greater than 50 bbls is classified as a Level 3b event, **requiring** a TapROOT investigation be initiated within 48 hours of the event, and a Root Cause Analysis and report be completed within 30 days.

**Following any spill response effort to accidental releases from Chevron owned cargo, Chevron vessels, or operational upsets at the Chevron Long Wharf the response effort and performance of the mitigation measures and their effectiveness in spill prevention, containment and control, and restoration shall be evaluated as part of this process. The results of any post spill root cause and lessons learned analysis will be shared with the CSLC and other agencies or interested parties. Copies of any reports/documents prepared as part of any post spill NLI/LPS assessments will be provided to both the CSLC Marine Facilities and Environmental Planning and Management Divisions.**

**GRP 4/5 Site Index/Response Actions**

<b>Site ID</b>	<b>IMPACT BY HR</b> (Ref. OC A) Note 1	<b>Site Description</b>	<b>Assignment</b>	<b>Date/Time Required</b>	<b>Date/Time Completed</b>
SF-400		San Francisco Waterfront			
SF-401		Pier 39			
SF-402		Alcatraz Island			
SF-420		Richardson Bay Marshes			
SF-421		Tiburon Peninsula			
SF-422		Kiel Cove			
SF-423		Angel Island			
SF-424		Paradise Cove			
SF-425		Corte Madera Marshes			
SF-426		San Rafael Creek Marsh			
SF-427		Marin Islands			
SF-451	<b>4 hr.</b>	Castro Rocks			
SF-452	<b>4 hr.</b>	Richmond Eelgrass Beds			
SF-453	<b>36 hr.</b>	Brooks Island			
SF-454	<b>36 hr.</b>	Richmond Inner Harbor/Hoffman Marsh			
SF-455		Santa Fe Channel			
SF-480	<b>72 hr.</b>	Albany Marsh			
SF-490	<b>72 hr.</b>	Berkeley Eelgrass Beds			
SF-495		Emeryville Lagoon Mudflats			
SF-501	<b>18 hr.</b>	Castro Creek and Marshes			
SF-502	<b>48 hr</b>	San Pablo Creek Marshes			
SF-503		Pinole Pt. Marshes-South			
SF-504		Pinole Pt. Marshes-North			
SF-505		Pinole Creek and Wetland			
SF-506		San Pablo Bay Eelgrass Bed			
SF-551		McNear's Beach Marshes			
SF-552		China Camp Marsh			
SF-553		Gallinas Creek Marshes			
SF-554		Novato Creek Marshes			
SF-571		Petaluma River Marshes			
SF-572		Tolay Creek			
SF-573		Midshipman Point			
SF-581		Sonoma Creek/Napa Slgh			
SF-582		N. E. San Pablo Bay			
SF-583		Napa River Marshes			

**Note 1 -** Sites identified impacted by 72 hour trajectory are listed with impact time frame. Other sites listed are balance of GRP, which do not show impact in by the OCA trajectory.

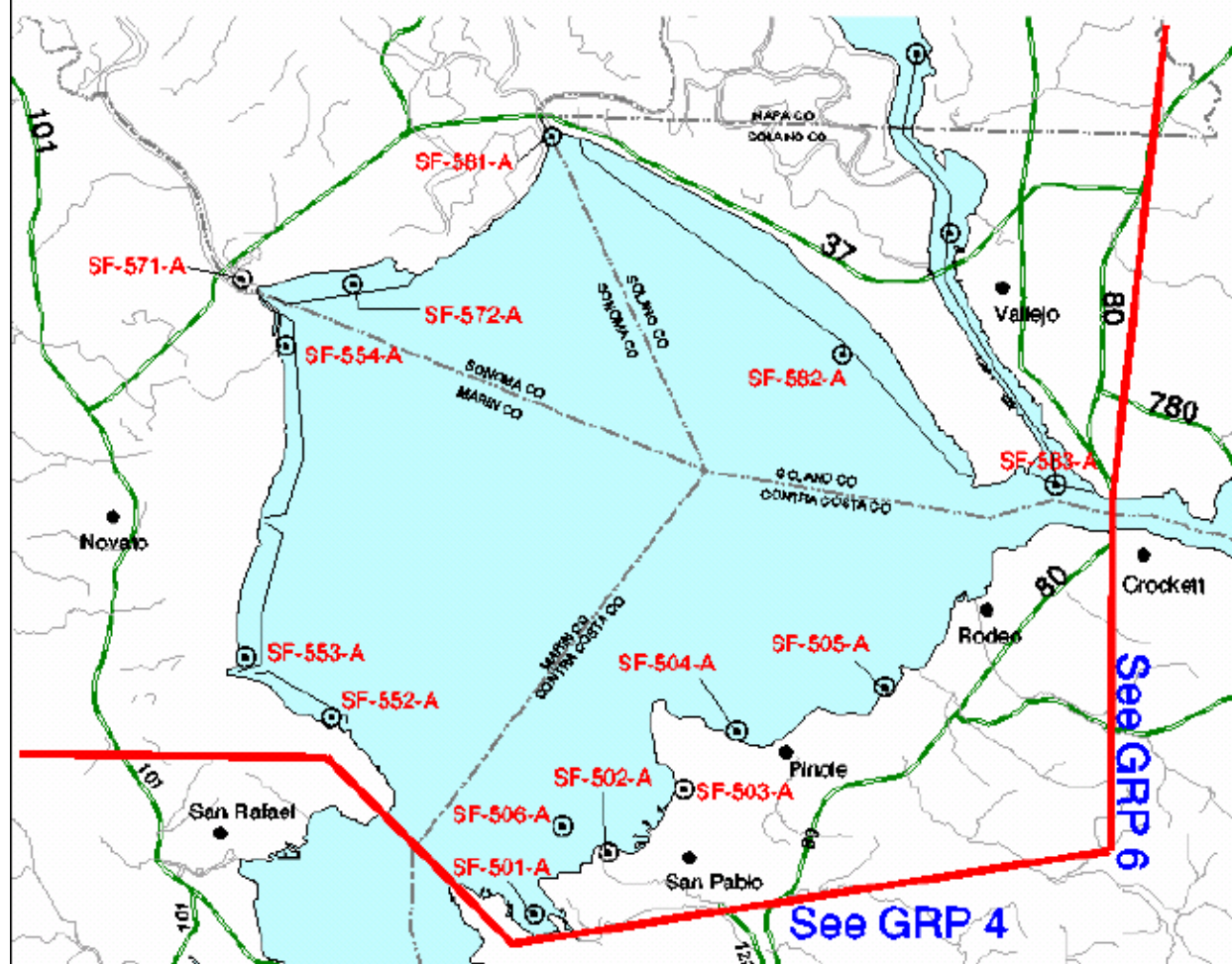


## ACP Sensitive Site Resource List – GRP 4

Site # 1998	Site # '96	Site Name	Boom (FT)	BB/Skiffs	Skimmers	Personnel
400	New Site	San Francisco Waterfront	Site	Strategy	Not	Developed
401	A-2-256	Pier 39	11000H/2900S	2/1	2	12-14
402	A-2-257	Alcatraz Island	2800C	1-2/1	0	5-8
420	A-2-201*	Richardson Bay Marshes	8800H	3/2	4-6	25 min
421	New Site	Tiberion Peninsula	Site	Strategy	Not	Developed
422	New Site	Keil Cove	Site	Strategy	Not	Developed
423	New Site	Angel island	Site	Strategy	Not	Developed
424	A-2-202*	Paradise Cove	4700H	2/0	1	9-12
425	A-2-203*	Corte Madera Marshes	600D/600 TBB	2/2	2	16-18
426	A-2-204*	San Rafael Creek Marshes	10700H/600 TBB	2/Numerous	1	15-18
427	A-2-205*	Marin Islands	600H/	2/2	1	12-15
451	A-2-230*	Castro Rocks	4000-9000H	2/2	2	10-12
452	A-2-231*	Richmond Eelgrass Beds	2400-3600H/ 1000-2000 TB	2/2	1	8-10
453	A-2-261	Brooks Island	2400-3600C	4-6/2		16-30
454	A-2-228*	Richmond Inner harbor	2800H/200S	1/2	1 VT	8-12
455	New Site	Santa Fe Channel	Site	Strategy	Not	Developed
480	A-2-260	Albany Marsh	Site	Strategy	Not	Developed
490	A-2-233*	Berkeley Eelgrass Beds	4800H/2000S	2/2	1	9-12
495	A-2-232*	Emeryville Mudflats	4500H/2000S	2-3/3-4	2	15



# SF Geographic Response Area 5 San Pablo Bay Environmentally Sensitive Sites



Note: Marker symbols (⊙) are only site reference and do not indicate full extent of sites.



## ACP Sensitive Site Resource List – GRP 5

Site # 1998	Site # '96	Site Name	Boom (FT)	BB/Skiffs	Skimmers	Personnel
501	A-2-229*	Castro Creek Slough	3500H	2/2	1	9-12
502	New	San Pablo Creek Marshes	2000	4/4		16
503	New	Pinole Pt. Marshes-South	6400	1/4	1	14
504	New	Pinole Pt. Marshes-North	2000	1/1		14
505	New	Pinole Creek and Wetlands	200	1	1	4
506	New	San Pablo Bay Eelgrass Bed	2000	3		13
552	A-2-207*	China Camp Marsh	3700H/4x4 SW	3/2	1	13-15
553	A-2-208*	Gallinas Creek Marshes	900H and TBB	1/0	1	4-6
554	A-2-209*	Novato Creek Marshes	3000H/500S	2/Numerous	1	15-18
571	A-2-210*	Petaluma River Marshes	5000H	2/2	1	12-15
573	A-2-211*	Midshipman Point	9000H	2/2	1	15-18
581	A-2-212*	Sonoma Creek/Napa Slough	2000H/400 TBB	1/0	1	6-9
582	A-2-214*	NE San Pablo Bay	7300H	2/2	2	9-12
583	A-2-213	Napa River Marshes	600H	2/0	2	9-12

## **207 DISPOSAL PLAN**

### **207.1 WASTE MANAGEMENT**

All disposal of oil and oily waste will be managed by the Environmental Branch Director, as discussed in Section 203. He/she will request assistance from the Hazardous Waste Section in the Refinery Utilities/Environmental Operations Division. This Hazardous Waste Section will fulfill the duties of the Hazardous Waste Unit shown in Figure 203.1 (Chevron Oil Spill Response Organization).

Sections 3240 and 4720.9 of the ACP provides additional guidelines, management techniques, and available resources which may be used.

### **207.2 TEMPORARY STORAGE**

Through the use of contracted equipment and Chevron-owned resources, Chevron has identified temporary storage capacity that exceeds the requirements for twice the planning cap and twice the maximum required daily recovery rate under OSPR.

Equipment lists demonstrating this storage capacity are provided in Appendix C of this Plan, and are available from MSRC as our primary OSRO. Solid waste storage areas will be made available through the use of on-site parking lots and open areas. These sites will conform to applicable regulations. See Appendix A (Figure A-2) for on-site facilities.

## **300 HAZARD EVALUATION**

### **301 General**

This section addresses the hazards and risks associated with operations at the Richmond Long Wharf (RLW), and the refinery including lines, pumps, and storage tanks. There were separate studies for the RLW and the balance of the Refinery. The approach and results are discussed in Sections 301.1 and 301.2.

#### **301.1 Richmond Long Wharf Hazard and Operability Analysis (HAZOP)**

The basis for this section is a Hazard and Operability Analysis (HAZOP) conducted for the Long Wharf from November 22, 1993 to January 11, 1994. A copy of the completed volume is kept in the Refinery HAZOP Center and is available for review.

The methodology used to conduct the HAZOP was in compliance with OSHA Regulation 1910.119, “Process Safety Management of Highly Hazardous Chemicals.” Several specific steps were utilized during the analysis, including:

- Choose plant section
- Discuss process and design envelope of the section (process description)
- Apply a deviation (guide word + parameter) or discuss other issues
- Brainstorm causes of the deviation
- Develop each cause to its global consequences(s)
- Identify existing systems and procedures (safeguards)
- Qualitatively assess the risk of the scenario
- When warranted, spell out additional considerations to reduce risk and/or improve the operability of the facility.

##### **301.1.1 HAZOP Team**

###### Analysis Team

The HAZOP team consisted of experts with knowledge of the process procedures and equipment as well as in the HAZOP process. Experts on specific systems were brought in on an as-needed basis whenever their input could have improved the analysis. The HAZOP team was comprised of an operator, mechanic and inspector from the terminal, ship’s personnel from Chevron Shipping, and a safety engineer from the Refinery. The team leader has had substantial experience in operations and training, with the last 6 months spent leading other HAZOP teams within the Refinery.

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The following provides a brief biographical summary of the teams work related experience:

- \*Nick Damante-** 2 years automotive repair training, 3 years Formal Operator Training, 4 week E.M.T. class, Operator-14 years at Chevron Long Wharf.
- \*Donn Matsumura-** B.S. Mechanical Engineering, A.A. in Liberal Arts and Applied Studies, Journeyman Machinery Mechanic, 11 years-mechanic, 3 1/2 years at Chevron-1 year as Plant Support Engineer for Long Wharf.
- Greg Goodman-** 3 years Formal Operator Training, A.S. in Electronics, 10 years as plant operator, 2 years-maintenance Instrument mechanic at Long Wharf
- Gary Heihn-** A.S. in Non-Destructive Testing and Surveillance Inspection Q.C., 1 year Chevron Utilities Division Inspector, 5 years as Chevron Long Wharf Inspector
- C. Agneta Dahl-** B.S. Biology, 4 years at National Cancer Institute. 3 years U.S. Coast Guard-Marine Safety Officer 2 month Training Assignment at Chevron Long Wharf
- Fred Modugno-** Marine College training, 5 years as vessel's mate, 4 years as Chevron Shipping Financial Analyst, 6 years in Chevron Shipping Operations. 3 years at Richmond Long Wharf
- Gary Toledo-** California Maritime Academy, Bridge Management Teamwork-England, Medical Advisory Training, 12 years on Chevron U.S. Fleet-3 years as Chief Mate
- Cliff Hunt-** 4years at San Jose State, 3year Formal Operator Training. Hazardous Waste Training - Cal Berkeley Extension, OSHA 1910. 120 forty-hour training, 12½ years at Chevron, 8 years environmental group, 6 months as Safety Engineer
- \*Elizabeth Hyde-** HAZOP Scribe
- \*Jim Lent-** Team Leader, 3 years Formal Operator Training, 2 years at Community College and University of San Francisco, 13 years with Operations, 11 years Human Resources (including Training and meeting facilitation), 2 years Work Process Improvement (including 6 months as full time Process Hazards Analysis Team Leader).

\* Quorum Team Member

### 301.1.2 Summary of HAZOP

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Over 35 systems (i.e., 30" Fuel Oil from Berths 2, 3, 4, 9, and 11 to Shore) and approximately 70 additional considerations were evaluated during the HAZOP. For each system or additional consideration analyzed, approximately 20 scenarios (deviation in operation) which could potentially occur were evaluated. In addition other parameters were evaluated for each scenario including; possible causes, potential consequences (ranging from oil spills to no unique consequences), existing systems or mitigation procedures in place, severity of incident, likelihood of occurrence, relative risk, and other considerations. A "What If..." Analysis was also prepared for several operational characteristics of the Wharf, including external events (earthquakes, etc.). Both analyses quantified the level of risk for each possible scenario.

Level of Risk was determined by using a matrix that evaluated two basic characteristics of the scenario: the likelihood of occurrence and the severity of incident.

The level of risk is demonstrated by a number or level. The five levels are:

- 1 = Very High Risk; Additional Consideration Required.
- 2 = High Risk; Additional Consideration Required.
- 3 = Significant Risk; Additional Consideration Required.
- 4 = Possible Risk; Additional Consideration At Discretion of Team.
- 5 = Negligible Risk; Additional Consideration At Discretion of Team.

Of the 1,000-plus scenarios evaluated, none, which would result in an oil spill, were assigned a risk level 1. There were, however, 2 scenarios (which could result in an oil spill) which had a level 3 and 7 which had a level 2. The mitigation measures for each of these scenarios (including solutions and expected completion dates) are summarized in Table 301-1. Implementation of these measures will eliminate the spill risk.

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**Figure 301-1 HAZOP Recommendations**

<u>Risk Ranking</u>	<u>Item number</u>	<u>System</u>	<u>Problem</u>	<u>Proposed Solution</u>	<u>Expected Completion</u>
2	14 - 16	6 Wax Line	Improper heat up of line could cause line rupture.	Line has only been used once over 3 years ago. Prior to next use, revise procedures	Complete
2	20 - 13	8" 1 - 8 Gas Line	System is isolated during routine operations Over pressure of the line could result	Evaluate system and remedy over pressure conditions.	Complete
2	24 - 2	Drain Pans	Drain boxes may fail due to corrosion and current inspection practices appear	Establish appropriate inspection process.	Complete
2	24 - 3	Sump	Sump alarm testing was not routinely being done due to the inability to remove inspection plugs.	Procedures in place to safely permit weekly testing. Modifications to the Inspection plugs are in progress.	Complete
2	29 - 7	Camlock Fittings on DCMAs	Current fittings are of poor design and must be forced to close	Ongoing project in progress to change out all camlocks. Over 50% have already been changed out.	Complete
2	29 - 8	Berth 4 DCMAs	Poor visibility at Berth 4 DCMAs Controller could lead to poor control of arms resulting in a spill	Develop interim action plan to reduce risks while evaluating longer term options.	Complete
2	33 - 28	Alarms	Records indicate inconsistent alarm testing in the past. duties process.	Add alarm testing procedures into the new Wharf Section routing	Complete
3	23 - 22	Vent Lines in Berth 4 & 1	Vent lines must be bent at an improper angled to be used for sample taking -- could leak.	Modifications made.	Complete
3	23 - 34	Drain Pans	Drain Boxes may be damaged or cracked. Current Inspection practices appear Inadequate to catch this	Establish appropriate inspection process	Complete

### 301.2 HAZARD ANALYSIS FOR RICHMOND REFINERY

The lines, tanks, and facilities of the Richmond Refinery and Long Wharf were evaluated using the “What-if/ Checklist” approach for potential scenarios resulting in release of oil to the waters. An overview of the approach used and the list of evaluating questions is provided in this section. An example study for the largest storage tank T-3106 and 36 in. Crude line is included for information and to illustrate the level of detail in the study.

Documentation of the hazard analysis is maintained at the Hazop Center in the refinery and available for review upon request.

## Transfer & Blending Crude Section and Refined Section Process Hazards Analysis

The Transfer and Blending Crude Section and Refined Section Process Hazards Analysis were conducted using the “What-If /Checklist” method. The PHA team consisted of an experienced team leader and scribe, an operator familiar with the areas being reviewed and an engineer from the Blending & Shipping Area Business Unit. Additional expertise, such as equipment inspectors, tank specialists, safety engineers and other operators were used when the team required additional information.

Each area was divided into major sections, such as tanks, transfer stations, manifolds, pumping stations and lines. Each item in these sections was then individually covered. Questions used in the Tanks area were:

What If...

The level is too low?	The tank is not inserted before first fill or when floating roof is resting on its legs?
The roof drain piping/hose leaks?	Floating roof pontoon/ compartment leaks?
Roof drain plugs, check valve malfunctions, or block valve not open?	The water draw operation is mismanifolded?
Valves, gaskets, manways, other tank appurtenances, and/or mixers leak?	Sample return line is blocked in, when sample pump is running?
The level is too high in the tank?	The first fill rate is too high?
The roof seal fails?	Sample valves leak/ leak-by or return valve is left open?
Tank gauge malfunctions?	There is a loss of power to the tank area?
The roof drain valve is left open?	The suction line block valve(s) is closed/ or MOV does not open?
Pressure/vacuum vent malfunctions?	The PSVs at tank, are blocked in/malfunction?
The tank bottom leaks?	There is lightening or static electricity spark?
The environmental plug is not re-installed or gauge hatch is left open?	There is catastrophic failure from an earthquake?
The floating roof ladder jams?	The fill line block valve(s) is (are) closed or MOV does not open?
There is a high water level/entrenched/layered/or emulsified water?	



Additionally, miscellaneous deviations were reviewed and discussed if applicable. These were:

Mechanical Seal Damage	Sampling	Wrong Material/Pipe Spec. Break
Maintenance	Corrosion/Erosion	No Reaction
More Reaction	Less Reaction	Wrong Reaction
Safety	Facility/Equipment Siting	Service Failure
Instrumentation	Testing	Relief
Ignition	Abnormal Operation	External Events
Wrong Concentration	Plant Optimization	Incidents

Process Hazards Analysis records can be reviewed at the Richmond Refinery Hazop Center office.

### 302 SPILL HISTORY

Chevron has brief summary data on oil spills at the Richmond Long Wharf for more than the past 10 years, but only has individual spill incident files for 1984 through the present. The oil spill history below is based on a review of this data. The 22-year period can be summarized as follows:

- No spill caused a significant impact on the environment
- The largest spills were approximately ten barrels
- Five spills were equal to or exceeded one barrel
- Proper agency notifications were made for all spills.

The spills described below are those which caused a change in procedures. They are listed in chronological order with the most recent listed first, and are categorized as spills originating from the Wharf, from vessels performing cargo operations at the Wharf, OR “fugitive spills” for which no source was proven or identified.

Figure 302-1

**LONG WHARF SPILL HISTORY SUMMARY**  
**APRIL 1984 to DECEMBER 2015**

**TERMINAL SPILLS**

Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
			NO SPILLS OF RECORD IN 2015			
08/25/14	16" Ballast bent 145 C	½ pt	While demoing old pipe plug was knocked loose from end of cut pipe allowing residual water to drip into bay.	Stim of plug protruded beyond end of pipe allowing it to become dislodged on obstruction.	None noted	Spill response equipment was deployed absorbent pads were used for signs of residual. Pipe was secured with plug and plastic
			NO SPILLS OF RECORD IN 2013			
			NO SPILLS OF RECORD IN 2012			
03/23/11	Lab Sump Pan	20 gals	20 gals of an oily water sump mixture was released to the bay from a pinhole leak in a containment pan.	A bleeder on a vacuum pump was left open and unattended.	None noted	Spill response equipment was deployed. Bleeder was closed, pans were sealed and then completely replaced.
10/20/10	DCMA	< 1 table spoon	While performing PM maint on Berth #3 DCMA 2 cables the mechanic moved the manlift in a way that the bucket shifted and spill over the side less than a table spoon of hydrocarbon.	The mechanic moved the manlift in a way that the bucket shifted and spilled over the side.	None noted	Mechanic was coached in the proper maneuvering of the manlift and the importance of protecting the environment.
5/6/10	Vapor Crane	2-3 drops	At 08:45 operator noticed the Hydraulic system leaking One drop every 2 to 3 minutes from the #2 winch on vapor crane.	The problem was found in a stainless steel connection that tied into the hose reel above the #2 hook.	None noted	The system was shut down and isolated and the connection was repaired.
6/21/09	Lab sump pan	1-2gals.	During high alarm test, laboratory sump pan overfilled and discharged	Hole (s) in high end of sump pan, human error while	None noted	Deployed containment boom around lab sump area and used

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0820			oily-water mix	conducting test.		absorbent sweeps/pads for recovery.
4/2/08 0645	Berth 3, VRS boom arm	½ pt	Hydraulic line pin hole leak discharged hyd fluid under pressure.	Rubbing of line against arm.	None noted; ISO 32 hydraulic fluid used.	Deployed containment boom around Berth 3 and used absorbent pads for recovery.
11/25/07 1240	Berth 3, VRS boom arm	5 drops	Hydraulic line coupling became loose	Loose fitting, corrosion	None noted; ISO 32 hydraulic fluid used.	Transfer stopped, retracted VRS boom and tighten line fittings.
<b>NO SPILLS OF RECORD IN 2006</b>						
<b>NO SPILLS OF RECORD IN 2005</b>						
3/23/04	Pad area drip pans	1 qt.	Tear in skin of drip pan allowed oil & water to drip into bay.	Corrosion from salt water environment	None noted	Boomed area; recovered material via sorbents; Agency notifications made; repaired pan.
3/3/04	12" Tetramer Line @ Pad block valve area	<1/4pt.	Sm. Hole in manufactured 90 on PSV discharge piping	Factory flaw in manufactured 90.	None noted	S/D cargo ops; cleaned area w/ sorbents; BLT'd PSV & repaired piping.
<b>NO SPILLS OF RECORD IN 2003</b>						
<b>NO SPILLS OF RECORD IN 2002</b>						
10/01/01, 1400	Berth #11; 4F/O Line	<1/4pt.	Leak in fuel oil line discovered by area operator.	External corrosion caused by moisture trapped inside insulation jacket.	None noted.	Whf. Personnel responded w/sorbents to clean up small sheen. Reported to USCG. Sucked down line, clamped, water-washed, blinded and taken OOS.
2/22/01	Berth #3; DCMA #3	< 1/2pt.	Leak in top seal of loading arm	Wear-hardening of internal seal ring.	None noted.	Whf. Personnel responded w/ workboat & sorbents to clean up small sheen. Reported to USCG.
<b>NO SPILLS OF RECORD IN 2000</b>						
1/31/99, 0105	Berth #1 DCMA #3	<1bbl.	Operator left inboard drain valve open; upon start of vessel discharge, oil ran out of containment into bay.	Operator error.	None noted.	Response personnel boomed vessel; deployed vac. Trucks to remove material from containment area; removed spilled material from bay w/ sorbents; reported incident to USCG.

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7/12/98	Pad sump area; P-13	< 1 gal.	P-13 pump seal failed; recovered oil leaked off pump base and into bay.	Seal material failure.	None noted.	Boomed area; cleaned w/ sorbents, reported to USCG.
Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
9/13/97	Berth #4, DCMA #5	1/2pt.	Gasket leak on DCMA while loading bkr. f/o	Old "O" ring gasket resulted in leakage.	None noted.	Cleaned up w/sorbents.' Reported to USCG.
4/19/97	Berth #3, DCMA #2	Few drops.	Hydraulic fluid dripped from capped-off hoses on DCMA hydraulic system during maintenance.	Maint. Personnel Error.	None noted.	Deployed boat to clean up sheen; dissipated before arrival or work boat. Reported incident to USCG.
<b>NO SPILLS OF RECORD IN 1996</b>						
11/5/95, 1350	Pump Pad; P13/P13A discharge header	1/2 pt.	While hydro-testing a line, a plug on a bleeder on P13/P13A disch. header blew out.	Operator error.	None noted.	Cleaned up sheen w/ sorbents; tightened plug; remedial training for responsible operator.
9/18/95, 1440	Berth #3; expansion joint on #2 F/O line..	~ 5 gal.	Leaking expansion joint on 2 F/O Line; drip pan under had developed a pinhole leak due to old age; leak dripped to bay.	Equipment failure.	None noted.	Cleaned up sheen w/ sorbents; repacked expansion joint; repaired drip pan.
6/2/95, 1400	Pump Pad; drain line from Lab into Pad Sump.	< 4 oz.	Small leak in drain line from Lab had dripped onto pan field piling cap flashing; small drip to bay.	Equipment failure.	None noted.	Replaced drain line; replaced Lab area pan field.
11/1/94	Berth #1; DCMA #3.	1 qt.	Top swivel leak on DCMA during transfer of HSFO.	Equipment failure. Problem identified as incorrect sealing material in swivel bearing race.	None noted.	Boomed vessel; cleaned up mat'l. with sorbents; repaired & hydro'd DCMA. Established procedure to ensure appropriate gaskets & sealing materials used.
9/25/94	Berth #4; fire monitor.	Trace/sheen	While testing fire system, light sheen observed from water pattern.	Special concern; Trace amts. of hydrocarbon contained in "DWOP" process.	None noted.	Flushed system to sump; no further problems noted.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
8/6/94	Berth #1; DCMA # 2.	~ 5 gal.	Top swivel leak on DCMA during transfer of HSFO.	Equipment failure. Problem identified as incorrect sealing material in swivel bearing race.	None noted.	Boomed vessel; cleaned up mat'l. with sorbents; repaired & hydro'd DCMA.
4/14/94	Boat launch jib crane on finger pier.	Trace/sheen	Gear box failure on jib crane.	Equipment failure. Bearing cap failure on traverse motor.	None noted.	Cleaned up sheen w/ sorbents. Replaced traverse motor gear box.
3/7/94	Pump Pad; P-2 PRV piping.	Trace/sheen	During routine P-M of PRV, a small leak developed on a threaded piping elbow. Small leak to bay.	Equipment failure.	None noted.	Replaced fitting; hydro'd and returned to service.
2/8/94	DCMA #1, Berth #3.	< 2qts.	While placing DCMA aboard a vessel, inboard arm hydraulic hose burst.	Equipment failure.	None noted.	Cleaned up sheen w/ sorbents from workboats; repaired DCMA. All hydraulic hoses are now changed out as part of annual routine I&M.
2/8/94	#4 F/O line.	Trace/sheen	Gasket leak during hydrotest of line at completion of routine maintenance.	Maint. personnel error.	None noted.	Cleaned up sheen w/ sorbents from workboats. Procedure now in place to have an observer in each valve pit area to check gaskets during hydro's.
1/28/94	DCMA	Trace/sheen	A plastic bag covering a black-oil DCMA leaked; small amount of fuel oil found dripping into bay.	Operator error.	None noted.	Staged DCMA; drained arm, changed bag. DCMA bags are now changed out routinely.
8/8/93	Pump Pad; drip pan.	~ 2 qts.	Crack in drip pan near driveway. Small amt. of gasoline leaked to bay.	Equipment failure.	None noted.	No recovery; lt. sheen dissipated rapidly. Repaired crack in pan.
2/25/93; 1730	DCMA #5, Berth #3.	< 2 oz.	Leak in hydraulic tubing on DCMA.	Equipment failure.	None noted.	No recovery; dissipated rapidly. Replaced tubing.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
2/12/93; 1300	DCMA sample valve, Berth #4.	~ 3-5 gal.	Sample valve left partially open; product sprayed into collector funnel and then carried by wind into bay.	Operator error.	None noted.	Cleaned up material w/ sorbents; wiped down area. Refresher training for Operator.
2/1/93; 1452	Berth #2; 100 Neut. Line lateral piping.	~ 1 qt.	Leaky valve bonnet on lateral valve top gasket; wind carried material into bay.	Equipment failure.	None noted.	No recovery; small sheen dissipated rapidly. Re- gasketed valve bonnet.
4/24/92; 0545	Pump Pad area; 30" Crd. line sample valve.	1-2 bbls.	Deadman valve failed to seat on sampler; product leaked past valve & out of valve box, into bay.	Equipment failure.	None noted.	Boomed the area; used sorbents to clean up the contained material. Replaced deadman valve; chained sample draw box drain valve open.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
1/14/92; 1655	Berth #3; vacuum truck.	Trace/sheen.	While sucking out the Berth #3 sump to clean up, the truck's vacuum hose burped when driver checked for a perceived blockage, resulting in a mist of oil & water into the air & then into the bay.	Maint. personnel error.	None noted.	No recovery; trace/sheen dissipated rapidly. Vac. truck drivers developed SOP to clear hoses safely.
5/7/91, 1535	Berth #3, 9 Whf. line, valve pit area.	< 2 gal.	Gasket leak at valve during hydro-test of line.	Maint. personnel error.	None noted.	No recovery; trace/sheen dissipated rapidly, flange was re-tightened.
4/23/91, 1430	Berth #3; 16" Ballast line.	5-7 bbls.	Bleeder left open on manifold while draining to a vacuum truck; product line opened onto manifold, resulting in product spraying out of open valve.	Operator error.	None noted.	Deployed containment boom via spill boats; cleaned up spill w/ sorbents.
2/24/91, 1020	Pump Pad; Pad sump	1/2 bbl.	Operator over-filled the Pad collection sump during routine high-level testing, resulting in spill of mixed mat'l.	Operator error.	None noted.	Boomed off the area; cleaned up spill w/ sorbents. Disciplined the responsible Operator.
2/11/91, 1650.	Pump Pad; 6" suck-out line on 36" Crd.	2 gal.	While pulling blinds, vacuum pump failed allowing crude to spray from a flange.	Equipment failure.	None noted.	Boomed off the area; cleaned up spill w/sorbents.
1/16//91, 1140	Berth #2; 20/40 Neutral Line	2 qts.	While hydro-testing the 20/40 Neutral line, a flange leaked under test pressure, resulting in a spray of material reaching the bay.	Maint. personnel error.	None noted.	Cleaned up sheen w/ sorbents from a workboat. Re-tightened flanges; re-hydro'd line.
1/8/91, 1135	Berth #3, DCMA #1.	Trace/sheen	DCMA flange bag tore, allowing light material clinging inside the bag to drip into the bay.	Operator error.	None noted.	No recovery; New bag taped over flange. Recommended procedure to replace bags more frequently.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
1/4/91, 1345	Berth #4, DCMA # 4.	1 qt.	While putting DCMA aboard a vessel, a hydraulic cylinder end seal failed, resulting in a spill of hydraulic fluid.	Equipment failure.	None noted.	No recovery; hydraulic fluid dissipated rapidly. Took DCMA out of service to remove & repair hydraulic cylinder.
1/4/91, 1515	Berth #12 area, #4 F/O Line	2 qts.	While removing cut-out pipe during maintenance on #4 F/O Line, the cut-out pipe was "picked" to drain the remaining water & oil from the pipe. The liquid drained into a containment barrel but some splashed over the side, into the bay.	Maint. personnel error.	None noted.	Cleaned up sheen w/ sorbents from a workboat. Reeducated Contractor personnel on proper procedures for picking and draining pipe.
12/22/90, 1600	Berth #1; valve pit containment area.	Trace/sheen.	Safety shower filter blew off, allowing fresh water to flood the containment area, which filled up the sump. By the time the LAH sounded, the level in the containment area had leaked thru old bolt holes for the handrail stanchions, causing a minor spill.	Maint. personnel error.	None noted.	Vacuum truck emptied sump; no recovery possible due to minute qty. released. Reset LAH set-point on sump alarm.
12/8/90, 1300	Causeway, Bt. # 98; # 6 Wax Line	1 bbl.	Ruptured line while heating up prior to cargo transfer. Product was semi-refined, "food-grade" wax. No visible sheen was noted from this incident.	Operator error (missed steam tracing, resulting in a cold slug in the line that led to the line rupture when the heated wax could not expand).	None noted.	Placed tarp under line to catch spilled wax. Collected hardened wax w/ wire rakes. Repaired line (NOTE: Wax is no longer transferred at the Wharf).
11/19/90, 0915	Berth #2, containment sump field drain line.	< 1 bbl.	Mechanical seal on the field drain into the containment sump box failed, allowing oil to drip out thru the mechanical seal into the bay.	Equipment failure.	None noted.	Boomed the berth; recovered contained material w/ vac. trucks and sorbents. Relaced mechanical seal & epoxy covering.



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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
11/19/90, 1115	Berth #2, #3 F/O Line	~ 2 bbls.	While pulling blinds on the #3 F/O, a “working” line was opened up to the manifold where the blind work was being performed, resulting in oil spraying out of the opened flange.	Operator error.	None noted.	The berth was already boomed in from an earlier, unrelated event. Spilled material was cleaned up w/ vac. trucks and sorbents.
10/26/90, 0845	Causeway; 16” Ballast Line	~ 8 oz.	While picking old, cut-out pipe during line maintenance, a plastic bag over the end of the cut pipe was ripped off, allowing a small amount of mixed water & cutter to drip into the bay.	Maint. personnel error.	None noted.	No recovery; the light sheen rapidly dissipated.
9/30/90, 0945	Berth #3; DCMA #6	~ 1 qt.	DCMA developed a leak in the top swivel, resulting a drip into the bay.	Equipment failure.	None noted.	Repaired DCMA.
8/23/90, 1940	Causeway; #3 F/O Line expansion joint @ Bt. 80-C.	1 -> 10 bbls	Expansion joint packing failed; resultant leak overran containment pan and spilled into bay.	Equipment failure.	None noted.	Drained line, took OOS, replaced exp joint. Boomed the spill; cleaned up w/ sorbents & vac. trucks.
12/30/89, 0615	Berth #9, Fuel Header.	~ 3 gal.	Bleeder valve left open on bottom of loading header. Overflowed containment into bay.	Operator error.	None noted.	Cleaned up spill w/ sorbents. Blocked in bleeder valve; replaced missing bar stock plug.
10/10/89, 1400	Berth #1, DCMA #3.	~ 1 qt.	Leak from presentation flange on DCMA at start-up. Diesel sprayed, and was carried by wind into bay.	Ship’s crew hook-up error.	None noted.	Cleaned up sheen with sorbents from workboat. Changed out DCMA flange gasket; tightened properly.
8/30/89, 0835	Berth #1, DCMA #1.	~ 4 bbls.	While preparing the DCMA for hydrotest, the locking device failed as the DCMA was being filled with wash oil, resulting in the DCMA falling into the bay. The drain hose was torn off, which led to the release of the wash oil to the bay.	Operator error (SOP is to chain-wrap the DCMA prior to filling w/ wash oil, rather than relying on the locking device).	None noted.	Boomed the area; cleaned up spilled material w/ vac. truck & sorbents. Retrieved DCMA w/ crane barge.

Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
4/28/89, 0115	Pump Pad; P-3 pump.	< 1 gal.	Pump head cracked; oil sprayed, and was carried by wind into bay.	Equipment failure.	None noted.	No recovery; P-3 is a gasoline pump, & the spilled material evaporated.
12/14/88, 1440	Berth #9; 3-8 Gas Line	~ 2 qts.	While cutting a line to remove pipe, oil that had been drained into a pan was lit off by the cutting torch. The operator put out the fire with a dry chem. extinguisher, which blew some of the material into the bay.	Maint. personnel error.	None noted.	Cleaned up spilled material w/ sorbents from a workboat.
11/29/88, 1155	Causeway; Bent #17, 6" Slop Line.	~ 2 gal.	Contract Maint. personnel were working on the 3-8 Gas Line, and drilled a pilot hole in the 6" Slop Line by mistake.	Maint. personnel error.	None noted.	Depressured line; replaced holed section of pipe. Safety mtg. to reaffirm procedures for drilling/cutting pipe.
5/22/88, 1915	Berth #3; drip pans.	~ 2 bbls.	While testing the Berth #9 sump, the LAH (high-level alarm) did not come on; operator continued to fill sump. The sump backed out into the drip pan field, and overflowed the pans, resulting in a spill of mixed material (dsl, gas, fuel).	Operator error (SOP is to stop test if a do-not-exceed liquid height is reached).	None noted.	Boomed the area; minimal recovery due to rapid dissipation of light material. Safety meetings to reaffirm procedures for testing sumps.
4/13/88, 1040	Berth #3, DCMA #6 manifold, 6" #4 Gas valve.	~ 2 qts.	Removing valve for maintenance. Material in internal cavity spilled to bay while picking valve.	Maint. personnel error.	None noted.	No recovery; small amt. of gasoline- type material rapidly evaporated.
1/5/88, 0855	Berth #4; #3 F/O Line.	~ 1 qt.	While filling the line prior to hydrotest, the vent hose jumped out of the drain funnel and sprayed oil into the air, resulting in a spill.	Maint. personnel error.	None noted.	No recovery; most of the material was test water, and the light sheen rapidly dissipated.
11/20/87, 1050	Berth #9; #3 F/O Line	~ 7 gal.	Blinds installed improperly during line maint. While filling line for hydrotest, the Berth #9 flange leaked, resulting in a spill.	Maint. personnel error.	None noted.	Boomed the berth; cleaned up with sorbents. Safety meeting to reaffirm proper blind installation procedures.

Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
11/6/87, 1045	Pump Pad; pump row.	~ 2 qts.	Hydrotesting block valve on pump. The test plug was removed, but the valve didn't hold; line pressure resulted in spray to bay.	Equipment failure.	None noted.	Cleaned up spill/sheen w/ sorbents from a workboat.
9/15/87, 1845	Causeway, Bent #59C; 11 Whf. Line	~ 3 gal.	External erosion; line rubbing on piling cap rail.	Equipment failure.	None noted.	No recovery; Line contains Jet Fuel, which rapidly dissipated.
8/9/87, 0630	Pump Pad area; collection sump pumps.	~ 2 gal.	The collection sump pumps did not keep up with the volume of material flowing into the sump; gasoline material backed up into the drip pan field, and a small quantity ran over into the bay.	Equipment failure.	None noted.	Pans cleaned up w/ vac. truck; repaired sump pumps. No recovery; gasoline-type material evaporated rapidly.
6/27/87, 0045	Berth #4; DCMA hydraulic system pump.	~ 1 gal.	While deploying DCMA's to vessel, a pipe nipple on the pump discharge pressure gauge cracked; hydraulic fluid overfilled the pump containment and spilled into the bay.	Equipment failure.	None noted.	No recovery; high winds rapidly dissipated the light material. Removed pressure gauge and capped; did the same on all hydraulic system pumps on the Wharf.
5/13/87, 1345	Berth #4; DCMA #5.	< 1 qt.	While deploying DCMA #5 to vessel, a hydraulic fluid hose developed a leak, which sprayed hydraulic fluid into the bay on the wind.	Equipment failure.	None noted.	Cleaned up sheen using sorbents from a workboat; standing tide allowed some recovery. Replaced hydraulic fluid hose.
1/12/87, 1635	Berth #2; field drain line.	~ 1 qt.	Field drain line corroded; developed pinhole leak, resulting in drip to bay.	Equipment failure.	None noted.	Cleaned up sheen using sorbents from a workboat. Replaced pipe on field drain line.
10/5/86, 1415	Berth #4; 12" Dsl. Leg.	< 1 pt.	12" Dsl. Leg "gassed up" from sun pressure; blew gasket @ flange, dripped to bay.	Equipment failure.	None noted.	Cleaned up sheen with sorbents from a workboat. Drained line; changed gasket.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
9/16/86, 1715	Berth #1; damaged piping under wharf.	~ 1 bbl.	Damaged piping from previous incident apparently leaked fuel oil into bay; no official determination.	Equipment failure.	None noted.	No containment action taken; area was already bouble-boomed due to previous incident, as preventive measure. Cleaned up with vac. truck and sorbents from a workboat.
8/20/86, 1300	Berth #2; 2F3 lateral manifold.	~ 1 gal.	Flange leak on 16" Ballast Line at 2F3 manifold. Leak sprayed into bay during a product transfer.	Equipment failure.	None noted.	Cleaned up sheen with sorbents from a workboat. Replaced gasket at valve.
8/7/86, 0945	Berth #1.	2 bbls.	While replacing pipe hangers under the Wharf, the Berth #1 piping broke loose from the remaining hangers, causing piping to fall into the bay. Some sections of pipe were stretched to failure, resulting in a spill.	Maint. personnel error.	None noted.	None taken at the time. Piping was replaced during total rebuild of all lines which had collapsed into the bay.
7/8/86, 0910	Pump Pad; 1D2 lateral.	~ 1 qt.	Flange leak while filling line prior to hydrotest.	Maint. personnel error.	None noted.	Cleaned up sheen with sorbents from a workboat. Replaced gasket at flange; retightened flange.
2/26/86, 1400	POW; Alkane 60 Line.	~ 1 qt.	Alkane 60 Line developed a leak on the bottom of the line. The product spilled was a "hard soap" detergent base, not an "oil", and made no visible sheen.	Equipment failure.	None noted.	Drained line; installed clamp. Ultimately replaced a large section of pipe. No recovery; see previous comment re. product.
5/16/85	Berth #2.	~ 1 qt.	Vent valve left open on test flange while filling cargo hose string for clean-up prior to hydro-test.	Operator error.	None noted.	Cleaned up sheen with sorbents from a workboat.
4/18/85, 0900	Berth #3; 16" Ballast Line.	10 bbls.	Mis-operation; opened wrong valve during maintenance.	Operator error.	None noted.	Boomed area; cleaned up with vac. truck & sorbents.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
4/17/85, 1000	Berth #3; field drain line to sump.	~ 1 qt.	Field drain line to sump developed a pinhole leak from corrosion; dripped to bay.	Equipment failure.	None noted.	No recovery; light product dissipated rapidly. Replaced bad pipe.
1/30/85	POW; 10" Benzene Line	Unknown	Product line developed a leak on the bottom of the line, dripped to bay.	Equipment failure.	None noted.	No recovery due to nature of product. Drained & clamped line; replaced bad pipe.
NO SPILLS OF RECORD IN 1984 <u>AFTER</u> FINAL DATE OF PLAN SUBMITTAL (4/1/84)						

VESSEL SPILLS

Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
			NO SPILLS OF RECORD IN 2015			
			NO SPILLS OF RECORD IN 2014			
6/10/13	Lynn Marie/ Berth 2	2 gallons	Dirty Oil Tank was overfilled spilling oily water to the water.			
			NO SPILLS OF RECORD IN 2012			
10/17/11	Mississippi Voyager, Berth 1	< 1 ounce	Jet A and water was released to the bay.	Check valve failure and improper lineup of piping caused material to the vessel deck. An improper scupper plug seal allowed the product to escape the vessel's internal containment.	None noted	Response actions were initiated. Procedures reviewed to prevent future piping alignment issues. Vessel reviewed critical scupper plugs prior to transfer operations.
09/26/11	Bulk Carrier Lindy Alice (3rd Party Vessel), Berth 2	< 5 gals	Less than 5 gallons of Tetramer was released from a leaking cargo hose while it was being lowered to the dock of the terminal	The flange was not fully secured – only hand tight.	None noted	Secured the source. Deployed spill response equipment. Re-emphasized proper procedures.
06/20/11	Anna Victoria IGS System (3rd Party Vessel), Berth 1	Soot	During inert gas system start up, soot was discharged into the bay.	Trip during IGS start up.	None noted	Most of the material broke up and sunk. RLW dispatched a workboat to attempt to recover the material, but it was not recoverable.
01/18/11	Cygnus Voyage, Berth 4	5 gals	Loss of 5 gals of lube from the sea water cooling system.	A fractured tube in the lube oil cooler	None noted	Repaired the fractured tube.
11/25/10	Florida Voyager diesel tank	3 tsp	At 12:10 pm the Florida Voyager overfilled their diesel tank which spilled onto the deck, approximately 3 teaspoons of diesel leaked through a scupper plug in the deck and hit the bay causing an oil sheen 10' X	Diesel tank overfilled	None noted	Spill response equipment was deployed by the vessels crew. Sheen had dispersed. Ship made immediate notifications as per the response manual checklist. Notifications also

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			10'.			made by T&B STL.
NO SPILLS OF RECORD IN 2009						
NO SPILLS OF RECORD IN 2008						
NO SPILLS OF RECORD IN 2007						
NO SPILLS OF RECORD IN 2006						
NO SPILLS OF RECORD IN 2005						
5/21/04	Berth #2; vsl. Perseverence	2 gal.	Upon vessel arrival, its IGS system leaked unburnt diesel into the bay via its cooling water return line.	Misoperation of the vessel's IGS system.	None noted.	Vsl. Secured IGS system. Vsl. Activated its response plan; NRC responded w/ boom boats. Terminal activated its response plan, did initial defensive booming.
3/12/04	Berth #3; Chev. Washington	Trace	While transferring bags of oily rags, one of the bags tore, releasing a small amount of waste oil to bay.	Breakdown in procedures; free liquid should have been drained to rec. oil onboard .	None noted.	No recovery possible; sheen rapidly dissipated. Agency notifications made.
NO SPILLS OF RECORD IN 2003						
NO SPILLS OF RECORD IN 2002						
NO SPILLS OF RECORD IN 2001						
12/9/00	Berth # 3; ITB Jacksonville	Heavy soot	Inert gas scrubber level controller failed, resulting in heavy soot overboarding into the bay.	Equipment failure on vessel.	None noted.	Most of the material broke up and sunk; Wharf personnel fully boomed vessel until nature of release determined.
5/13/00	Berth #2; Barge Klamath	½ gal.	Stuck gauge on barge resulted in 15 bbl. Spill to deck; scupper drain valve leaked by, resulting in lube oil spill to bay.	Stuck gauge/ leaky containment valve.	None noted.	Wharf personnel boomed vessel; deployed sorbents to recover spilled material.
3/31/00	Berth #1; vessel Kenai	Heavy soot	Vessel's inert gas generator scrubber overfilled on level control, resulting in heavy soot release cooling water overflow to bay.	Equipment failure on vessel.	None noted.	Wharf personnel notified vessel,; vessel corrected problem. Notified USCG.
<b>Date/Time</b>	<b>Location/ Equipment</b>	<b>Approx. Qty.</b>	<b>Description of Spill Event</b>	<b>Cause</b>	<b>Environmental Impact</b>	<b>Corrective Action taken</b>
2/11/00	Berth # 1; vessel Panther	Trace/sheen	Vessel arrived with leak at stern	Equipment failure on vessel.	None noted.	Notified USCG/ DFG-OSPR.

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			tube.			Wharf personnel used sorbents to remove tr. Matl.
<b>NO SPILLS OF RECORD IN 1999</b>						
<b>NO SPILLS OF RECORD IN 1998</b>						
6/20/97	Berth #9; Tug Claudia Foss	5-10 gal.	Tug overfilled starboard fuel tank while loading diesel bkrs.	VPIC not following established procedures for loading bkrs.	None noted.	Wharf personnel boomed vessel; deployed sorbents to recover spilled material.
12/1/96	Berth #4; Prince Wm. Sound	~5 gal.	Vessel developed a hole in cargo tank stripping line; ~20 bbl. deck spill, small spill over fishplate to bay.	Equipment failure.	None noted (scouted shoreline by boat and on foot to ensure no grounding).	Terminal activated its response plan, boomed vessel. Recovered some material w/sorbents. Vessel completed discharge using a separate system.
1/17/96	Berth #3; barge Millicoma.	~ 1 gal.	While loading, sheen observed off the stbd. bow of the barge; thought to be a leaking tank.	Cargo tank leak on barge. Product was gasoline.	None noted.	Stopped loading; tankerman pumped cargo to other tanks; no recovery.
9/21/95, 0900	Berth #2; Tug Sea Horse.	5-> gal.	Tug was waiting in the Berth #2 area to assist a barge away from the Wharf. Tug was transferring bilge material onboard; overran rec. tk.	Tug personnel error.	None noted.	Activated terminal Response Plan; deployed boom, boats, sorbents, surveillance helicopter, etc.
5/29/95, 1855	Berth #2; Chevron Oregon; cargo hose crane.	Trace/sheen.	Blown seal in extension arm of hose crane sprayed a small qty. of hydraulic fluid into bay.	Equipment failure.	None noted.	No recovery; small qty. dissipated rapidly.
3/4/95	Berth #9; Tug Cavalier	Trace/sheen.	Lube oil leak from prop shaft packing box.	Equipment failure.	None noted.	Reduced lube oil reservoir pressure; leak stopped. No recovery by tug.
1/20/95	Arco California	Trace/sheen.	Tug Standard #4 observed sheen at the stern of Arco Calif. during mooring; sheen rapidly dissipated.	Unknown.	None noted.	Terminal--none
<b>NO SPILLS OF RECORD IN 1994</b>						
11/14/93	Dredge barge	~ 1 gal.	spilled 5 gal. diesel on deck; 1 gal. overboard.	Equipment failure.	None noted.	Terminal--none.
9/15/93	Berth #2; barge Lube Quest.	~ 8 oz.	Tankerman left stripper valve while loading cargo, resulting in spill of lube oil on deck; overran to bay.	Tankerman error.	None noted.	Stopped transfer; assisted tankerman w/ cleanup.



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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
7/18/92	Berth #4; Overseas Alaska.	Unknown.	Leak in ship's bunker line where it ran thru the vessel's sanitary system tank, allowing Bunker oil into the sanitary tank. When the sanitary tank was decanted to the bay, it resulted in a minor spill.	Equipment failure.	None noted.	Stopped decant when sheen observed.
12-12-91	Berth #3; K.T. Derr.	Unknown.	While transferring fuel onboard, engineer overran a tank; spillage to deck leaked to bay thru a loosened scupper plug.	Tankerman error.	None noted.	Stopped transfer; cleaned up deck. Terminal deployed boat & sorbents to clean up sheen.
8/6/91	Berth #4, Chev. Sun	Unknown.	Prop shaft leak.	Equipment failure.	None noted.	Reraired shaft packing.
7/6/91, 0615	Berth #4; Chevron Sky.	~ 15 gal.	Vessel discharged soot & unburned bunker fuel residue from IGS system from cooling water	Equipment failure (incomplete combustion of fuel for IGS make-up).	None noted.	Stopped decant. Terminal deployed boats & sorbents to attempt picking up the resultant sheen.
6/22/91, 1320	Berth #4; crane barge.	Trace/sheen.	Hydraulic system on crane barge.	Equipment failure.	None noted.	Terminal--none.
5/23/91, 1330	Berth #9; barge Marin Nooner	~ 1->2 gal.	Pinhole leak in hull near tank top.	Equipment failure.	None noted.	Stopped loading operation; transferred cargo to other cargo tanks, stopped leak. Barge sent away for repairs.
3/6/91, 1145	Berth #9; Tug Chevron Richmond.	~ 1 qt.	Tug ran over a diesel fuel tank thru tank vent.	Tankerman error.	None noted.	Tug stopped transfer, cleaned up deck. Terminal assisted w/ cleanup.
2/11/91, 0950	Berth #7 area; barge Andrew.	Unknown.	Developed fuel line leak on diesel system.	Equipment failure.	None noted.	Terminal deployed boat & sorbents to clean up sheen.
11/13/90, 1330	Berth #3; Chevron Louisiana.	2->5 gal.	Vessel had developed leak in bow thruster hydraulics, and was making repairs. The vessel had been boomed as a precaution. As vessel was departing, a sheen was observed coming off the bow.	Equipment failure.	None noted.	Terminal deployed boat to attempt cleanup; departure turbulence eliminated sheen. Hand-wiped containment boom before storing, as precautionary measure.

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Date/Time	Location/ Equipment	Approx. Qty.	Description of Spill Event	Cause	Environmental Impact	Corrective Action taken
11/7/89, 1400	Berth #1; TeeKay Vigor.	~ 5 gal.	Vessel developed leak in shaft packing.	Equipment failure.	None noted.	Terminal deployed boat with sorbents to clean up. Repaired shaft packing.
9/5/89, 1515	Berth #2; barge Millicoma.	~ 5 gal.	Barge overran cargo tank while loading lubes.	Tankerman error.	None noted.	Stopped cargo. Terminal deployed boat w/ boom & sorbents to contain & clean up.
3/22/89, 0525	Berth #9; barge CTL #1.	~ 4 gal.	Barge developed a crack in hull while loading.	Equipment failure.	None noted.	Stopped cargo; transferred cargo to other tanks to stop leak. Terminal deployed boat to clean up.
12/31/88, 1150	Berth #1; OSCO Buccaneer.	~ 10 gal.	Vessel developed leak at prop shaft (packing?). Sheen reported by pilot during mooring operation.	Equipment failure.	None noted.	Vessel depressured lube reservoir; No recovery.
12/22/88, 0001	Berth #2; Stolt Vincita.	~ 20 bbls.	Vessel overran tank while loading ship's bunkers.	Tankerman error.	None noted.	Terminal boomed vessel. Clean Bay cleaned up spill.
4/26/88, 1955	Berth #1; Sebastian Ler de Tejada.	~ 10 bbls.	Vessel overran cargo tank while loading HSFO.	Tankerman error.	None noted.	Terminal boomed vessel. Clean Bay cleaned up spill.
1/3/88, 0830.	Berth # 2; Chev. Louisiana.	Unknown.	IGS generator carried unburned diesel fuel out vent into bay.	Equipment failure.	None noted.	No recovery; soot & sheen dissipated rapidly.
2/13/87, 1250	Berth #1; Cove Leader.	Unknown.	Spots of oil observed along stbd. hull during mooring operation by Mate; suspected crack in hull. Vessel was boomed by Terminal; cargo was off-loaded from all wing tanks, resulting in sheen & patchy material dissipating.	Equipment failure.	None noted.	Vessel was boomed by Terminal; material inside boom was cleaned up by Terminal.
11/26/86, 0930	Berth #11; CTL #1.	Unknown.	Barge overran cargo tank while loading; small qty. leaked out loosened scupper plug.	Tankerman error.	None noted.	Stopped cargo; tankerman cleaned up deck; Terminal cleaned up spill w/ workboat & sorbents.

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<b>Date/Time</b>	<b>Location/ Equipment</b>	<b>Approx. Qty.</b>	<b>Description of Spill Event</b>	<b>Cause</b>	<b>Environmental Impact</b>	<b>Corrective Action taken</b>
3/1/86, 0640	Berth #1; SeaStar.	Unknown/ trace	Vessel blew gasket on deck piping at vessel manifold. Small qty. of HSFO sprayed up and was caught by wind.	Equipment failure.	None noted.	Stopped cargo; vessel cleaned up deck & replaced gasket. No recovery.

FUGITIVE SLICKS NOTED BY TERMINAL OPERATIONS

Date/Time	Location Noted	Description of Event	Environmental Impact	Corrective Action Taken, if Any
03/09/2011	Brickyard Cove Marina	Diesel leak inside the marina breakwater.	None noted	Deployed sorbent boom vicinity 7 Pump station. Sheen rapidly dissipated.
1/27/2010	IVO Berth 4	Subsurface droplets breaking surface and creating a silver sheen.	None noted NRC: 929821 CaEMA: 10-0729 CC County: HSD/On call notified	Operator verified on and under dock for leakage – none noted. USCG on scene, unable to ID source. No further action taken.
4/14/99	Berth #4, north of mooring platform.	Operator noted fuel oil slick floating nr. Stern of vessel Marine Columbia, which had just arrived at Long Wharf.	None noted.	Operators boomed vessel and took samples from bay water. No source positively identified. Notified USCG, DFG/OSPR.
2/7/99	Temp. work platform in Berth #7	Operator noted intermittent sheen in location of floating platform used by causeway repair contractors.	None noted.	None; sheen rapidly dissipated.
12/30/97	Berth A	Operator noted oil sheen in the area of Berth A.	None noted.	Wharf personnel deployed work boat and sorbents. .Notified USCG.
5/8/96, 0255	Berth #4.	Black, sooty material observed by Berth Operator between vessel and Berth Operator Shelter.	None noted.	Per the Head Operator and Supervisor, the material showed no “sheen”, and was thought to be stack soot from a passing vessel.
4/17/96, 0815	Berth #9.	Patchy, weathered material floated thru Berth area on the tide.	None noted.	Wharf crew launched a workboat to attempt to I.D. the material; took sample, no source found.
1/12/91, 0730	Berth #4.	Sheen floated thru Wharf on the tide.	None noted.	
1/3/91, AM	Shoreline near #7	Sheen floated into embayment on the tide.	None noted.	

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	Pump Station.			
11/14/90, AM	Berth #2.	Sheen observed by area Operator near the stern of the barge 450-7. Sheen dissipated rapidly.	None noted.	Continued to check area during cargo ops.
8/26/90	Berth #4.	Sheen floated in on the tide.	None noted.	
4/29/89, 0910	Berth #1	Sheen floated in on the tide.	None noted.	
3/9/89, 1125	Berth #1.	Sheen floated in on the tide.	None noted.	
3/6/89, 0001	Berth #3	Sheen floated in on the tide.	None noted.	
2/25/89, 0930	Berth #1	Sheen floated in on the tide.	None noted.	
9/20/88, 0800	General Wharf	Sheen floated in on the tide.	None noted.	
12/8/87, 1120	Berth #1; around vessel Sebastian Ler de Tejada.	Sheen noted around hull. No source identified.	None noted.	
5/19/87, 1250	Berth #4; around hull of vessel Cove Liberty.	Sheen noted around hull. No source identified.	None noted.	
2/9/87, 0800	Pump Pad area.	Sheen floated in on the tide.	None noted.	

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## **OFFSITE CONSEQUENCE ANALYSIS**

### **303.1 SCOPE**

This Offsite Consequence Analysis (OCA) is intended to supplement the Hazard Analysis for identifying the impact area from the Reasonable Worst Case Discharge (RWCD) at the facility. The Hazard analysis, which is documented separately, focused on the identification of possible hazards that may result in an oil spill from the facility. Whereas, the goal of the OCA is to identify from a given spill scenario the credible impact area and the potentially impacted sensitive environmental sites over a 72 hour period.

The Offsite Consequence Analysis involved a progressive study of the spill site involving evaluation of the sensitivity of spill trajectories to pessimistic seasonal weather and environmental conditions, 72 hour spill trajectory for the identified pessimistic conditions, and identification of the area at risk from a spill and the potential impacted sensitive sites. This analysis was performed and documented by BlueWater Consultants, Novato, California using the “OILMAP” spill modeling software by ASA.

The results of the trajectory analyses are shown on color maps delineating time contours for the extent and impact of oil discharged from the terminal location. The trajectory plots display the differences with seasonal conditions and types of products.

The impact areas have been correlated to the sites identified by the ACP (12/97 ed.) The planned protection and recovery strategies would follow the recommendations contained in the ACP. This information includes a description of the area, shoreline characteristics, identification of sensitive marine resources, and strategy for deployment of resources.

***Supplemental trajectory models have been completed by the MSRC and are referenced, but contained in the MSRC Operations Manual.***

### **303.2 SPILL TRAJECTORY ANALYSIS APPROACH AND SPILL MODEL BACKGROUND**

#### **303.2.1 Analysis Approach**

The offsite consequence analysis involved a progressive study for each site involving the following tasks:

- a. Sensitivity analysis of spill trajectories to seasonal weather and environmental conditions
- b. 72 hour spill trajectory for the identified pessimistic conditions
- c. Identification of the area at risk from a spill and the potential impacted sensitive sites.

The area at risk from a release at site was evaluated using a trajectory and fates modeling analysis for potential RWCD spill volumes, which may result from oil transfer operations. A sensitivity analysis was performed on these results to evaluate possible seasonal environmental, and weather impacts. This was performed using stochastic evaluation technique for trajectories over each seasonal period. The identified pessimistic conditions were used to develop trajectory plots depicting the projected areas of impact over a 72-hour period. These trajectories are based on specific type of products and have incorporated weathering and fates considerations for the oil.

The areas at risk of impact from the analysis have been compared to the sites identified in the Area Contingency Plan (12/97 edition). California State representatives, USCG representatives, local city and county representatives, environmental groups, and industry representatives develop the ACP through a joint effort. The sites considered through the ACP process include:

- water intakes
- lakes and streams
- fish and wildlife
- recreational areas
- endangered flora and fauna
- wetlands or other environmentally sensitive areas
- other areas of economic importance including sensitive terrestrial environments, aquatic environments, and unique habitats

#### **303.2.2 Oil Spill Model**

The analyses were completed using oil spill modeling software OILMAP for Windows V2.4 from Applied Science Associates (ASA). Several oil spill modes within OILMAP were applied to the analysis. These modes were configured to address specific types of spill impact including assessment of different response scenarios on the spill fate, spill

trajectory and weathering prediction, and statistical probabilities of shoreline impact of the spilled oil.

The oil spill trajectory analysis for support of the Offsite Consequence Analysis involved primarily the **Trajectory, Fates, and Stochastic modes** summarized below:

#### Trajectory and Fates Mode

The trajectory and fates mode of operation predicts both the movement and weathering of surface oil. The fate processes simulated are spreading, evaporation, entrainment, emulsification and shoreline stranding.

Either instantaneous or continuous spills with a constant oil release rate can be simulated. Each spilllet is transported and weathered independently. The oil composition, selected by the user from a library of oil types, is characterized by its boiling point curve. This characterization allows the model to accurately predict the weathering of a wide variety of crude and refined oil products.

#### Stochastic Mode

In the stochastic mode, a user-specified number of spill simulations are executed varying only the environmental conditions at the time of the spill. The stochastic model includes all the weathering processes in the trajectory and fate model.

The spill release occurs at random times over a period of time (by month to over an entire year). Historical wind records from regional meteorological stations can be used, or the model can generate wind time series from zero- or first-order statistical wind distributions.

The multiple trajectories predicted by the stochastic model are summarized as probability contours showing the probability of land and water areas being impacted by oil spilled at the specified release site. The probability contours form an envelope showing the direction(s) oil will move from the site and where it will impact land. Simulation results enable the user to assess potential extent of the area at risk for that seasonal period.



### 303.3 APPLICATION OF OILMAP MODEL TO SPILL SCENARIOS

#### 303.3.1 Oil Spill Scenario

The Reasonable Worst Case Discharge (RWCD) scenario identified by the Oil Spill Contingency Plan was used to evaluate the potential impact on the shoreline. The parameters of the spill are summarized below:

**Figure 303.1 - Oil Spill Modeling Scenario Information**

Product	Crude Oil
Quantity	31,135 bbls
Source Location:	Richmond Long Wharf
Seasonal Considerations for greatest impact	Winter

In each scenario, the spill was considered to be instantaneous discharge at the identified location. The model calculation time step was 10 minutes, with a dispersion factor of  $1.5 \text{ m}^2 / \text{sec}$ . The simulations were run until all the oil was fully dissipated from either evaporation, dissolution, or grounded on-shore over a period of 72 hours (3 days.)

Trajectory and fates modeling runs were completed with differing seasonal wind data and at varying times of release in the tidal cycle. The trajectories considered both summer and winter conditions to determine effects of seasonal wind trends on the potential impacted areas.

#### 303.3.2 Environmental Data

##### Hydrodynamic

Tidal current and river induced flows, providing input to OILMAP for San Pablo Bay, were derived from a two dimensional, depth averaged, finite element hydrodynamic model of San Francisco Bay (King, 1990; Shrestha et al., 1993). The model solves the vertically averaged equations of motion to predict the currents and water surface elevations. Friction losses are approximated using either a Chezy or Manning formulation.

The bay was represented by a finite element mesh consisting of two-dimensional (e.g., rectangular, triangular) and one-dimensional elements. The grid covers the entire bay from the entrance at Golden Gate Bridge and both the south and northern branches of the bay. The model was forced by tidal elevation at the open boundary at the Golden Gate Bridge and river and other freshwater flows in the interior.

#### Wind

Wind data used in the model simulation was based on a regional statistical wind summary. Wind speed and direction time series for the Summer (July - August) and Winter (December - February) were created from summary data taken from the International Station Meteorological Climate Summary (NCDC, 1992) for the nearest recording site.

This wind data was compiled into monthly speed and direction probability tables. The tables are monthly statistical summaries of the probability of wind coming from a particular direction and within a range of speeds. The monthly data records generated are essentially a synthetic time series based on wind probabilities for the selected month.

### 303.4 RESULTS

The Sensitivity Analysis and Trajectory results are summarized on the following maps:

- Figure 303.2A-H – Spill Trajectory – 72-Hour
- Figure 303.3 -Spill Time Contour Map - Summer Conditions
- Figure 303.4 - Spill Time Contour Map - Winter Conditions
- Figure 303.5 - Weathering and Fates Graph

#### 303.4.1 Spill Trajectory Results

The Spill Trajectory maps represent the spill path. The spill mass concentrations are represented by the black dots and a gradient is associated with each dot reflecting the relative distribution of the oil. A legend to the color scale is provided on each map. Shoreline impacts are identified by red markings. Key geographic and sensitive environmental site references are identified by either name or colored shoreline. A legend of the color key is also provided on each map.

The model has incorporated weathering effects on the oil and partial loss by evaporation, and mixing with the water column. As a conservative factor, the shoreline characteristics have been negated to allow maximum refloating and circulation of the oil particles.

The modeling time period was a maximum of 72 hours. The time required for the oil to reach the shoreline is determined by the tide stage and the speed, direction of the wind, and the amount of material loss to evaporation.

Figure 303-2 A through 303-2H provides timed sequence of the spill trajectory. A summary of the relative rate of loss to the environment from the spill is provided in the Weathering & Fates Graph (Figure 303-5)

### **303.4.2 Sensitivity Analysis Results**

Seasonal variations impact have been evaluated through the stochastic model. Historical winds for the period were categorized into summer and winter seasons. Wind velocity and direction vectors representative for the seasons were evaluated creating a range of probable spill trajectories.

Generally, the regional weather generally has two primary seasonal conditions, summer conditions and winter conditions. In the summer, the prevailing west wind and the thermal induction from the valley dominate winds. In the early morning and evening, winds can be light and variable. In the winter or fall, the winds are generally light and variable, with occasional stronger winds representative of passing winter storm systems. Generally, a strong wind cross the tidal flow tends to act as a driving function forcing the spill out of the main tidal flow. This can result in grounding on the shoreline earlier and may result in less travel and shoreline area impact.

The RWCD spill was tested for both summer and winter wind influences on the spill trajectory. The relative impact is illustrated in Figures 303-3 and 303-4. The greatest shoreline impact was determined to be during the winter- which does not have the driving factor of prevailing west winds forcing the spill on to the shoreline. As a result the 72-hour trajectory is based on the Winter conditions.

### **303.4.3 Toxicity Effects and Persistence of Discharge Considerations**

Oil may persist for long periods of time between the rocks and pier supports. Heavy oil, e.g. Crude Oil or No. 6 Fuel Oil, often adheres to large structures while lighter oils, e.g. Diesel, would initially coat the substrates and gradually be released in the water flow. Toxicity effects would be of the oil would be primarily induced from smothering and ingestion. This would be especially prevalent in the intertidal zone. Additional discussion of the relative toxicity, persistence, environmental impact of spilled oil is located in the Clean Bay (MSRC) RRM Section 304.3 and 306.5 and ACP Section 4000 and 9000.

### **303.4.4 Sensitive Environmental Sites at Risk**

The Sensitive Environmental Sites at Risk from the RWCD spill over a 72-hour period are summarized in Section 206 of this plan. The sites are identified with their corresponding reference to the ACP. The relative time period and order of impact are listed according to the results of this Offsite Consequence Analysis.

FIGURE 303-2A – SPILL TRAJECTORY HOUR 4

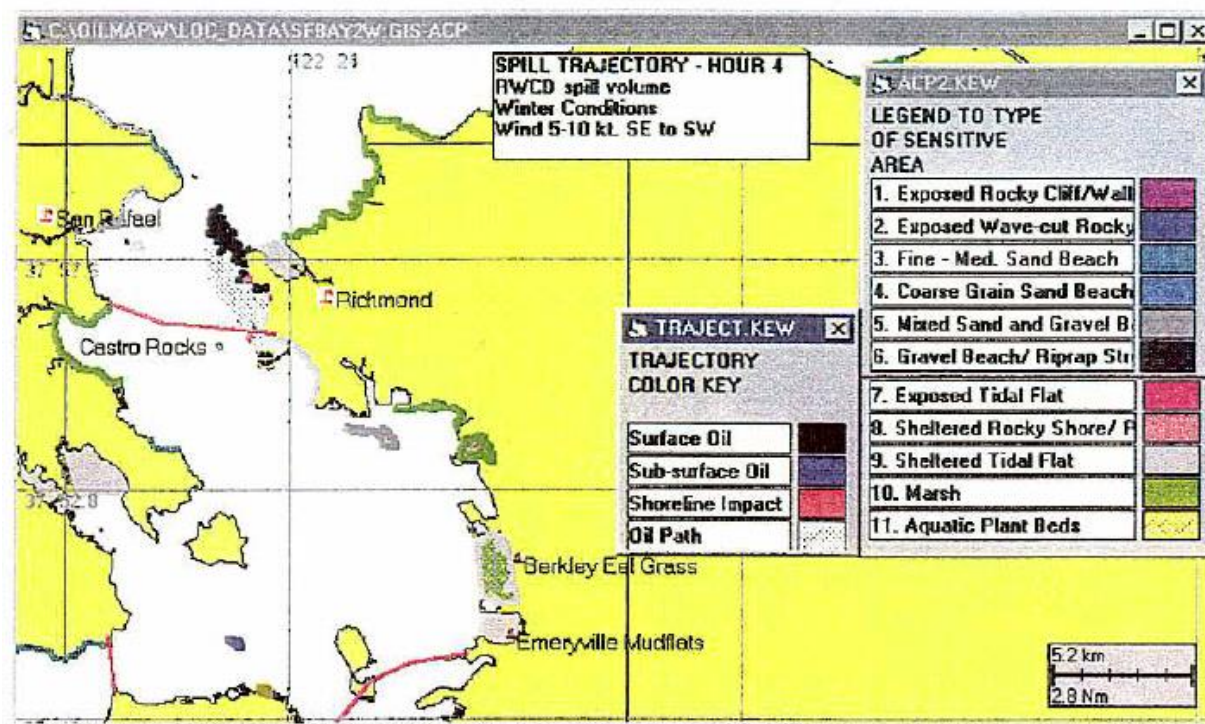


FIGURE 303-2B – SPILL TRAJECTORY HOUR 6

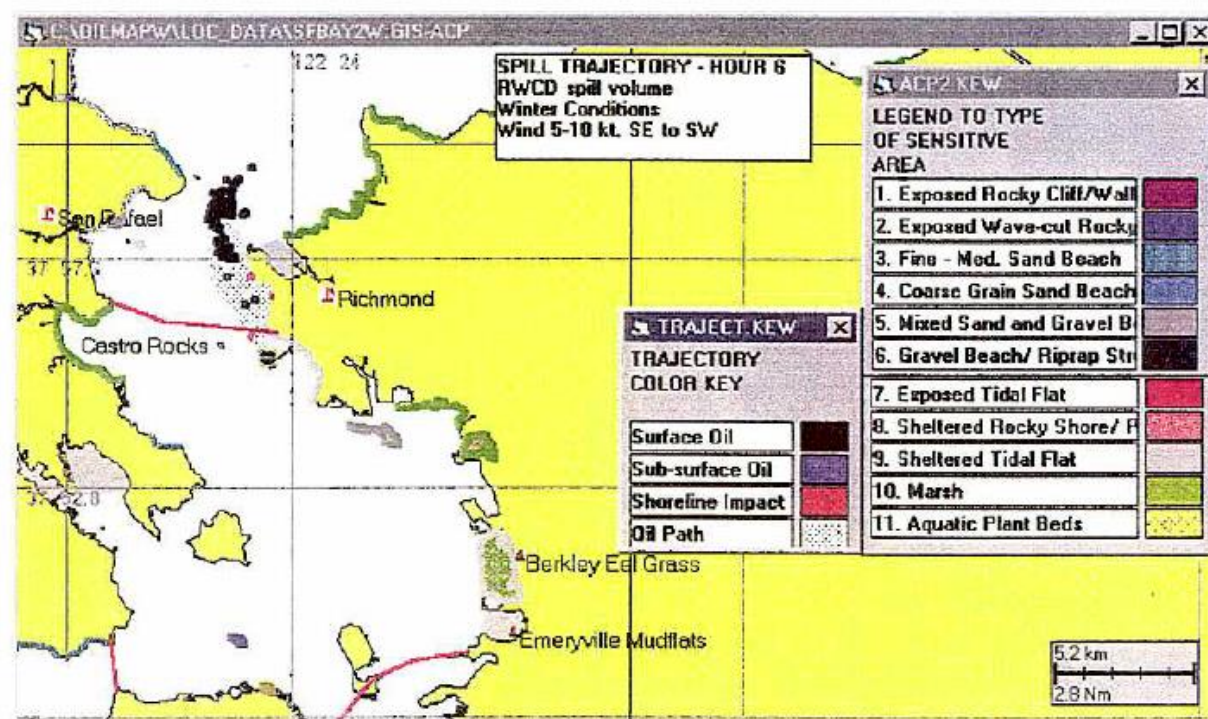




FIGURE 303-2C – SPILL TRAJECTORY HOUR 12

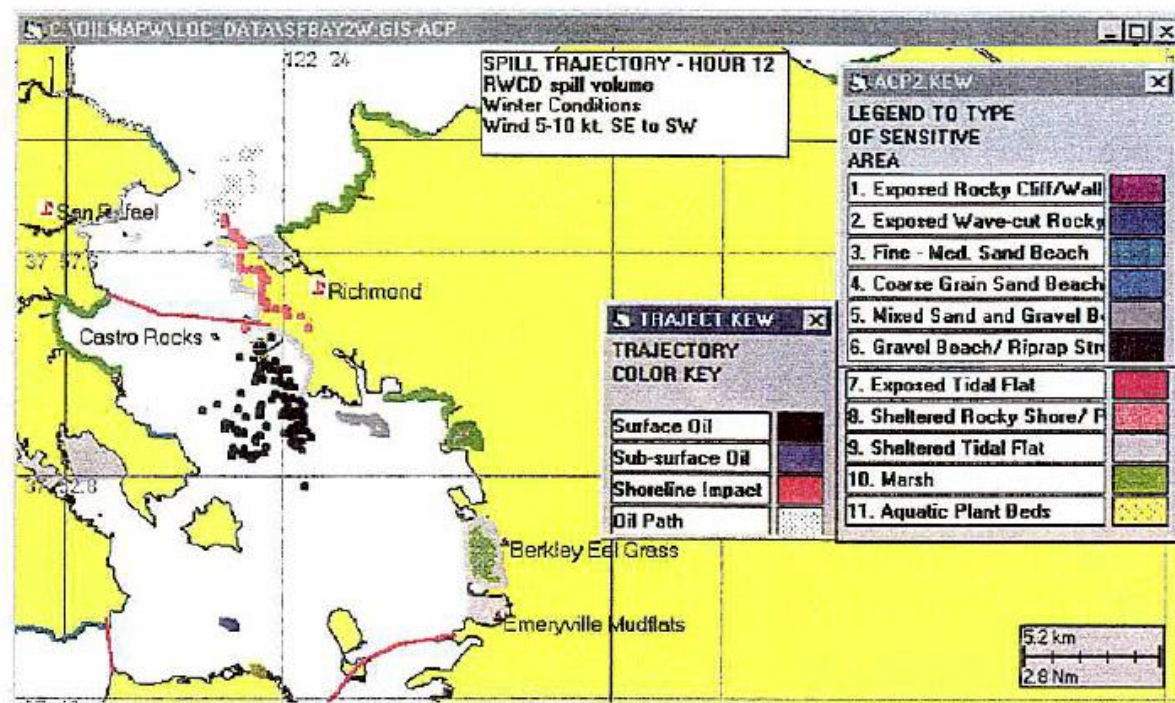


FIGURE 303-2D – SPILL TRAJECTORY HOUR 18

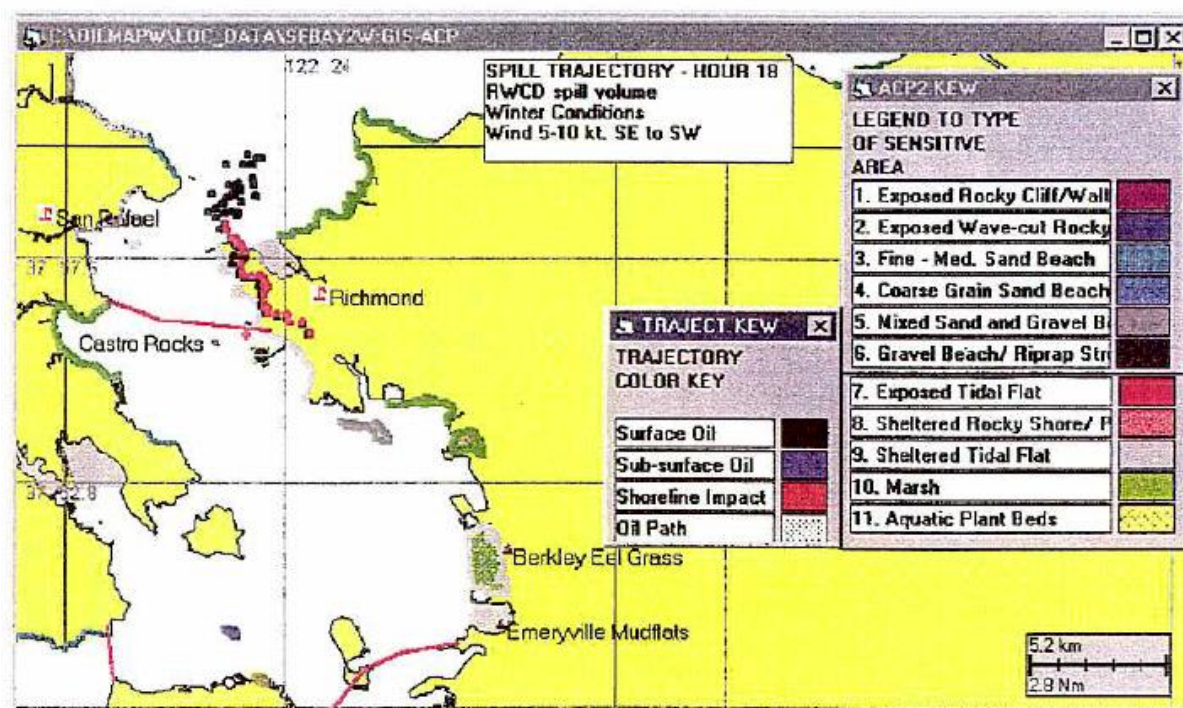




FIGURE 303-2E – SPILL TRAJECTORY HOUR 24

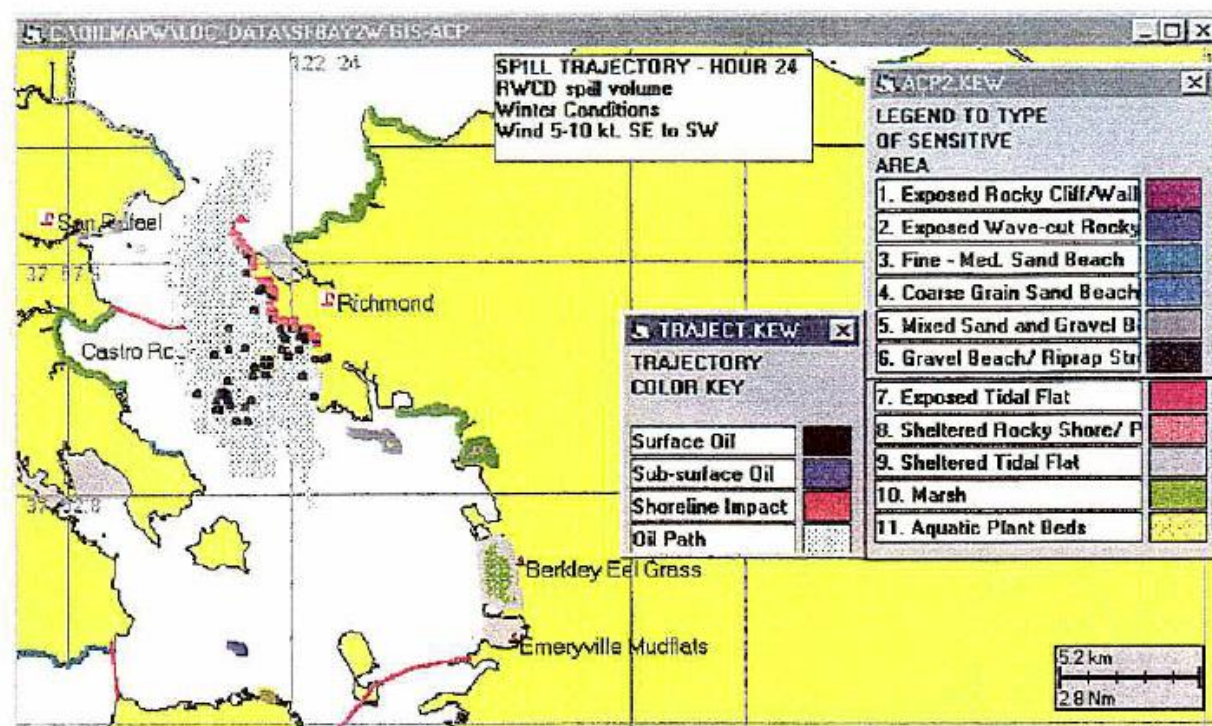


FIGURE 303-2F – SPILL TRAJECTORY HOUR 36

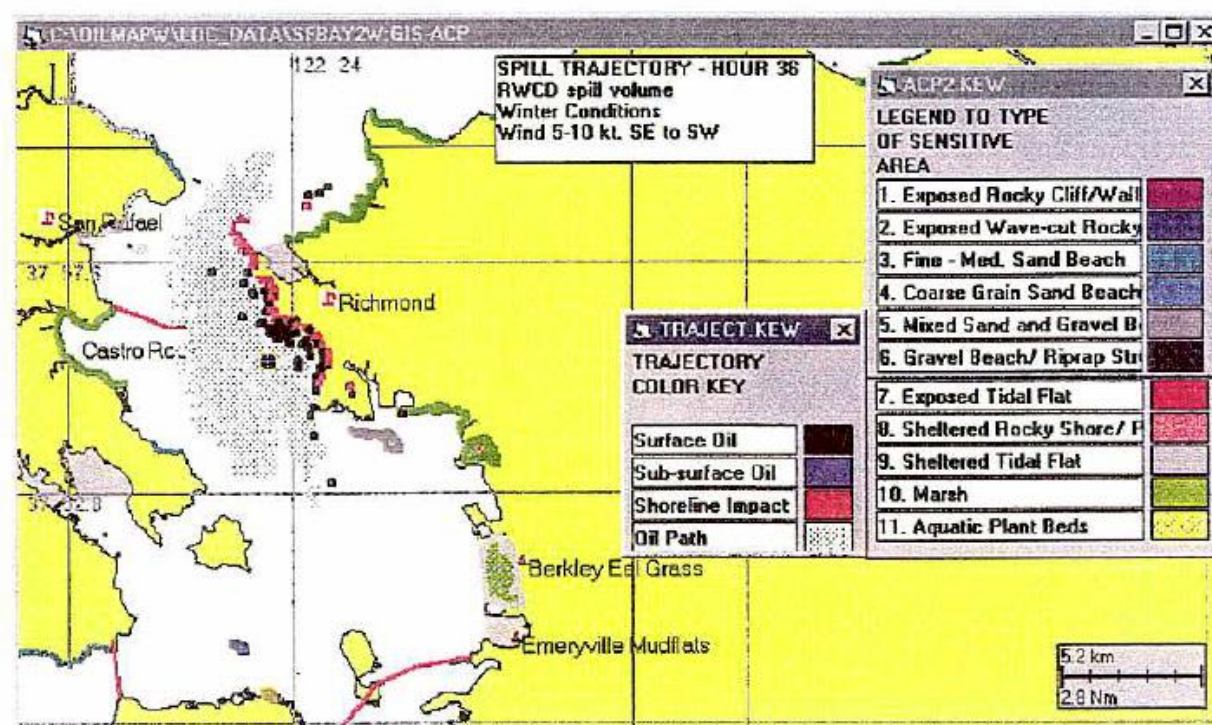




FIGURE 303-2G – SPILL TRAJECTORY HOUR 48

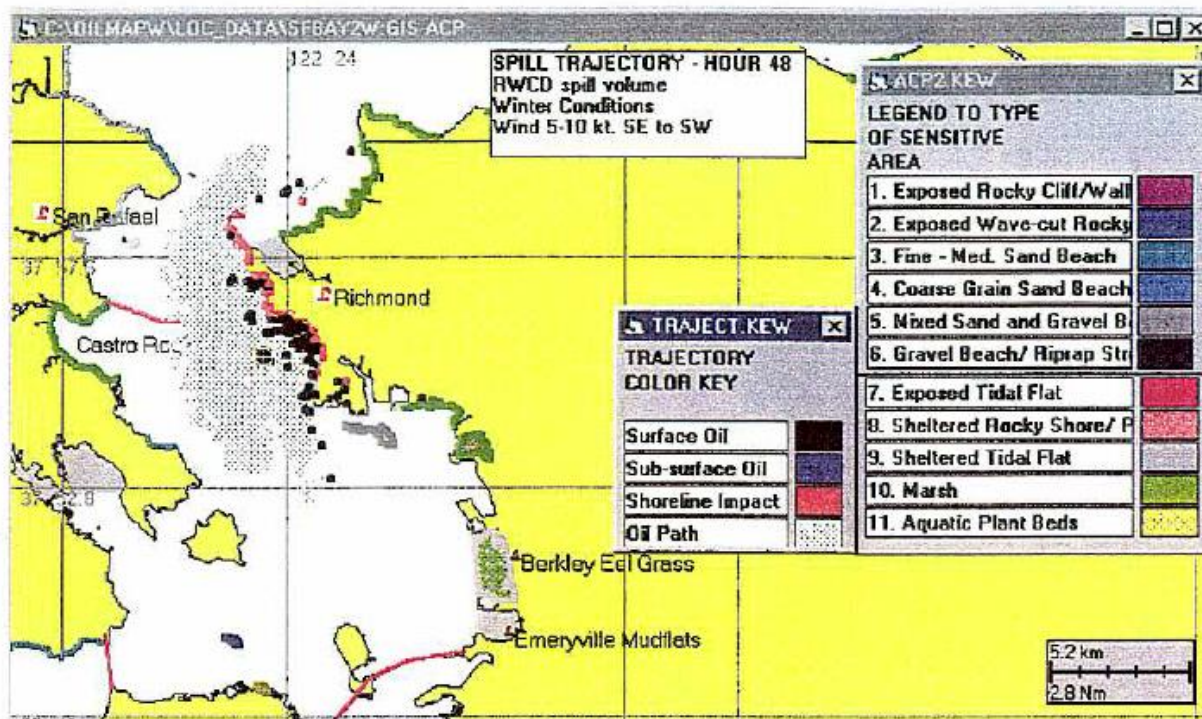


FIGURE 303-2H– SPILL TRAJECTORY HOUR 72

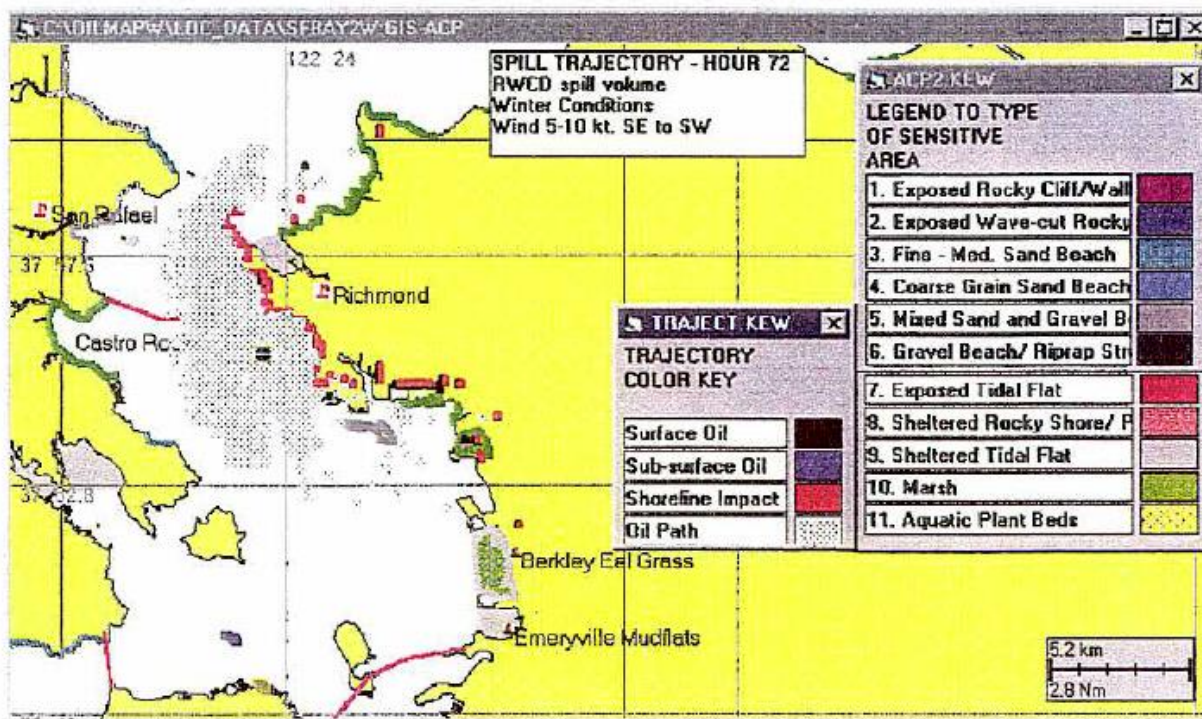




FIGURE 303-3—SPILL TIME CONTOUR MAP - SUMMER

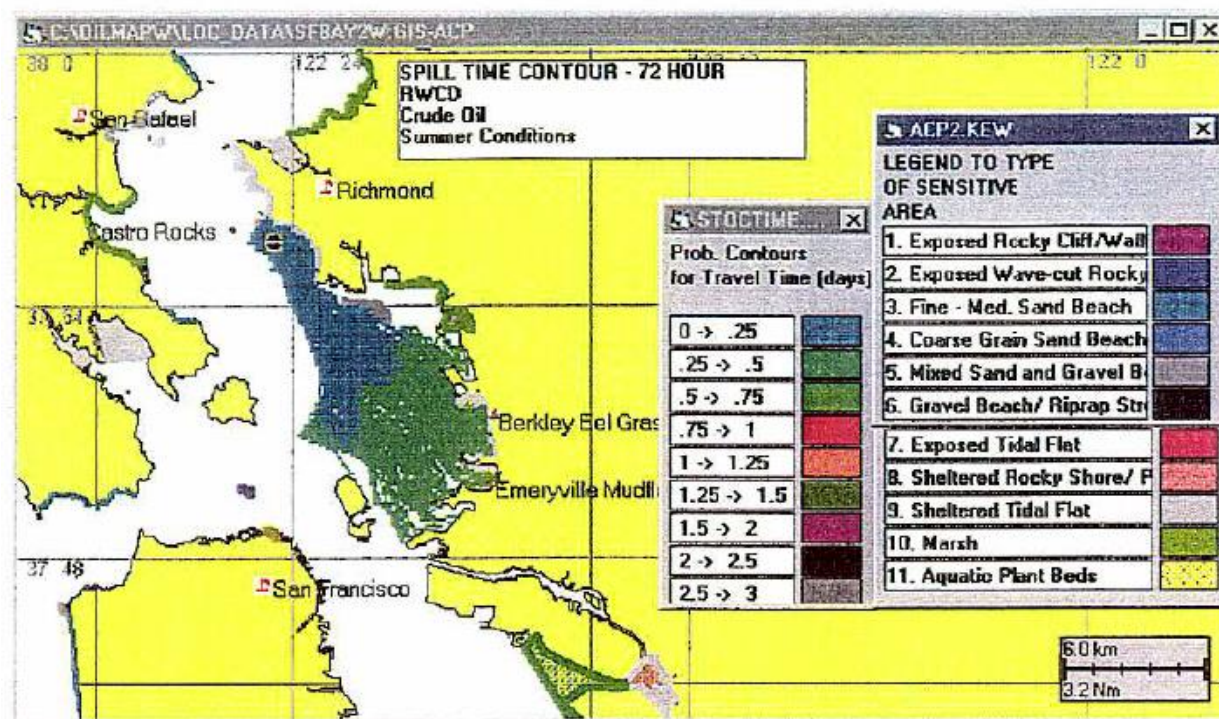


FIGURE 303-4—SPILL TIME CONTOUR MAP - WINTER

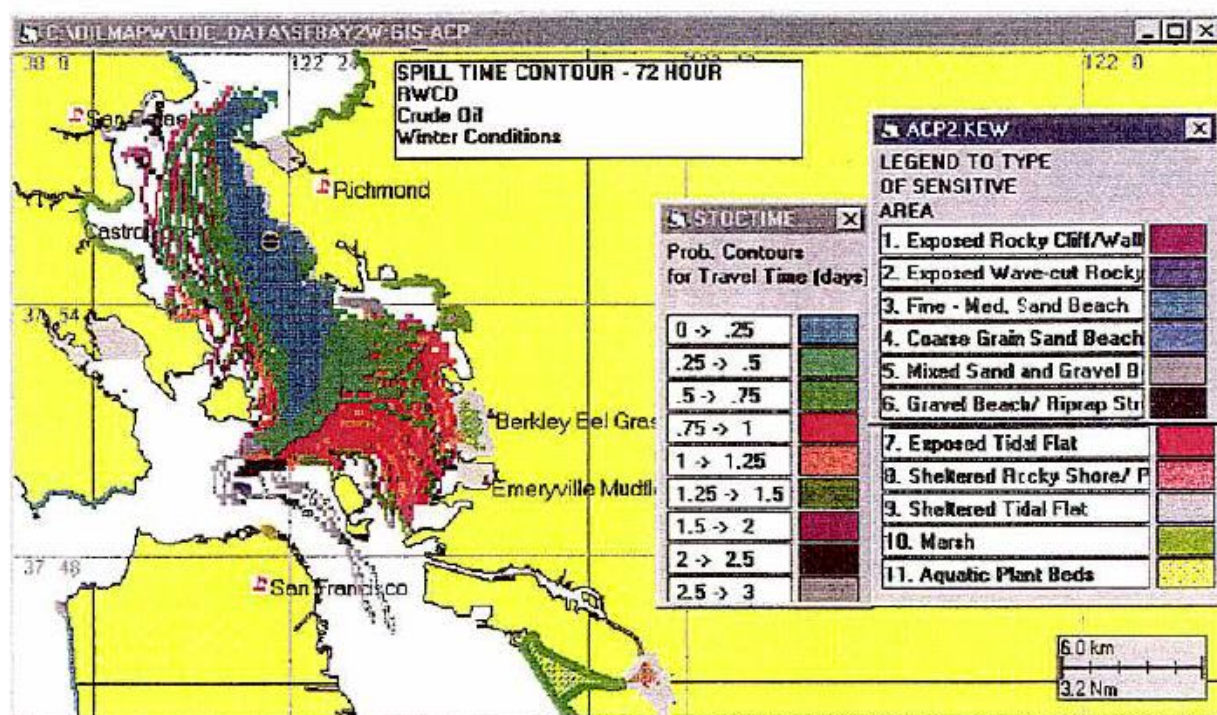
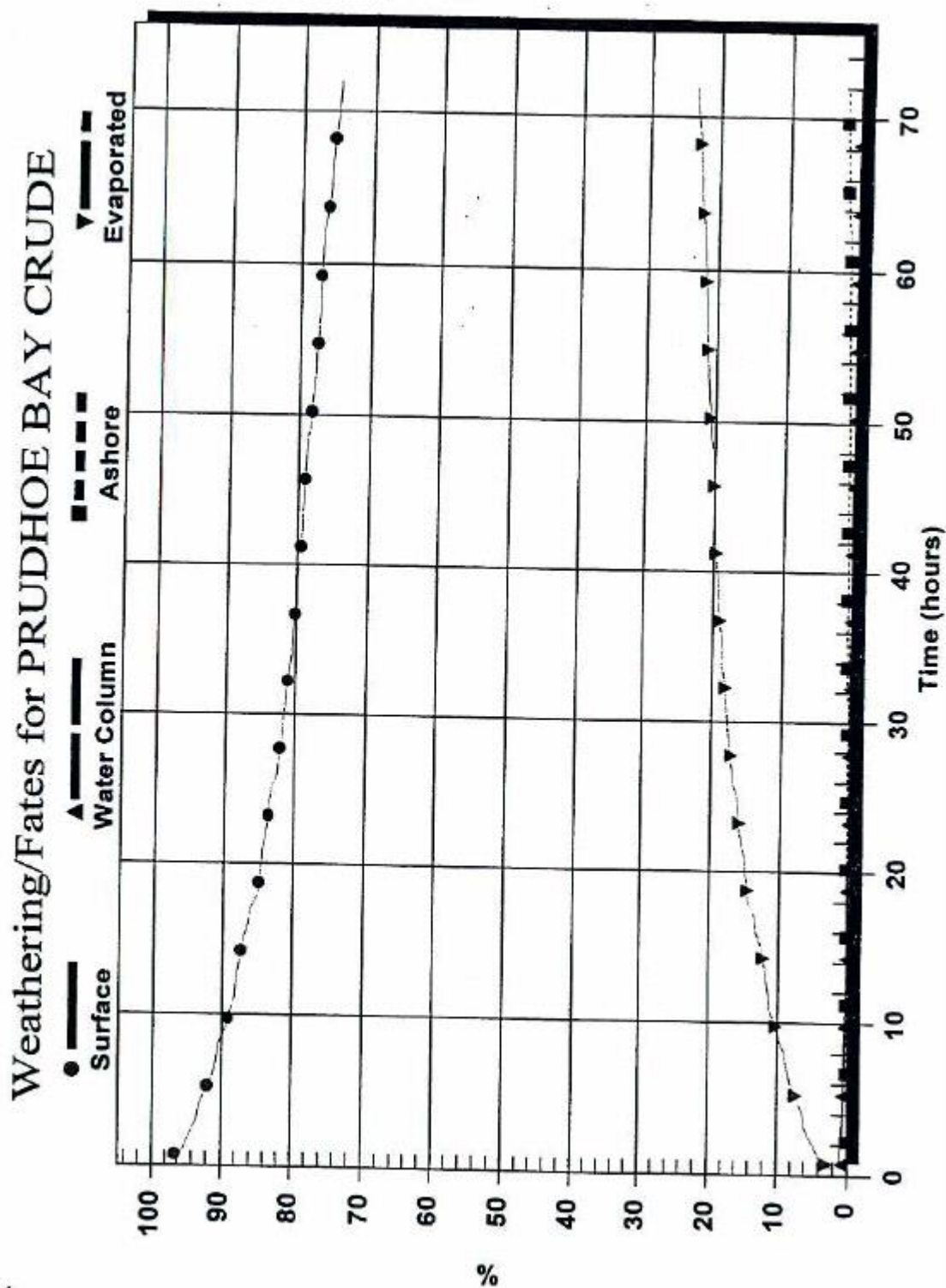




FIGURE 303-5 – WEATHERING AND FATES GRAPH



## **304 Wildlife Rehabilitation**

### **304.1 General**

Protection of wildlife involves 3 main areas of focus:

- 1) protecting the affected habitat
- 2) minimizing impacts to resident wildlife due to the oil spill response efforts; and
- 3) care and rehabilitation of any affected wildlife.

In the event of a spill, wildlife may come into contact with oil especially on the surface of water or along shorelines. The numbers of individuals and species affected will depend on a number of variable factors, such as size of the spill, weather, wind and currents, habitats affected, and time of year the spill occurs. The most likely wildlife to be affected are birds, although aquatic or marine mammals can be affected. Terrestrial mammals are more likely to be secondarily affected when they scavenge other animals that are stressed or have died. Wildlife may also become stressed as a result of the oil spill response effort.

Rehabilitation is the restoration (as far as possible) of wildlife to the same condition it was prior to the oiling. There are two key elements that affect the success of rehabilitation programs: rapid response and proper facilities. It is of the utmost importance that affected wildlife be identified, collected, and transported to care and rehabilitation facilities as soon as possible. Marine wildlife, in particular, has special requirements (e.g., clean flowing seawater) that are available only in certain facilities.

### **304.2 Wildlife Restoration Unit**

A member of the Chevron Corporation Environmental Functional Team heads the Wildlife Restoration Unit. These individuals have received supplemental training in the area of wildlife rehabilitation. This Unit Leader reports to the Environmental Branch Director as shown in Figure 203.2. The Wildlife Restoration Unit Leader will be responsible for the direction of any contracted wildlife organization. He/She will also be the key liaison with the CDFG, FWS, etc. on wildlife issues.

### **304.3 Legal Background**

A number of wildlife species are protected to a greater or lesser extent by legal and regulatory restrictions. An analysis of the main issues involved is summarized in the Clean Bay (MSRC) Regional Resource Manual in Section 306.3.

#### **304.4 Rehabilitation Resources**

Chevron has notified OSPR that they intend to participate in the California Oiled Wildlife Care Network (OWCN). Activation of this agency is on the notification list in Section 201.

In addition, Chevron has established a service agreement with directly with International Bird Rescue and Research Center (IBRRC). Written verification of this agreement is provided in Appendix I.

In addition, a listing of other organizations in the region available for Rescue and/or Rehabilitation Efforts is in Section 3600 of the San Francisco Area Contingency Plan and State of California Wildlife Response Plan.

#### **304.5 Care and Rehabilitation Procedures**

A summary of procedures involved in wildlife rescue and rehabilitation is covered in State of California Wildlife Response Plan (see link below)

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=16207>

## 400 SPILL SCENARIOS

This section provides the discharge planning volumes and discharge scenarios associated with the refinery. The Refinery and Long Wharf are subject to CA OSPR, USCG and EPA jurisdiction, and together are considered to be a “complex” type facility. The planning volumes address the various spill volumes and corresponding planning volumes, which are required by the CA OSPR, USCG and EPA. The purpose of these volumes/scenarios is to identify the amount of spill response equipment required for the facility. The USCG and EPA have different spill volume basis and titles for discharge volumes. The values are compared and the greater identified as the planning volume.

## 401 DISCHARGE PLANNING VOLUMES

The discharge volumes provided below are used to determine the planning volumes for the facility. The planning volumes represent the amount of response equipment which the owner/operator must ensure (by contract or other means) is available to respond to a spill at the facility, within a specified time frame.

Marine Transfer-Related (MTR) facilities that contain both marine transfer and fixed aboveground onshore structures used for bulk oil storage are jointly regulated by EPA and USCG and are termed "complexes". As such, all "complexes must compare average most probable, maximum most probable, and worst case discharges derived by EPA and USCG calculations and plan for whichever volume is greater.

Based on oil group, location, emulsification, and response time constraints, planning volumes have been calculated.

**FIGURE 400-1 OIL GROUP DEFINITIONS**

<b><u>Oil Group</u></b>	<b><u>Determining Characteristics</u></b> (Reference 33 CFR 1020)
<b><u>Non-persistent Oils</u></b>	
<b>I</b>	Petroleum based oil that, at the time of shipment, consists of hydrocarbon fractions that both: <ol style="list-style-type: none"> <li>At least 50% by volume distill at 645 F (340 C)</li> <li>At least 95% by volume distill at 700 F(370 C)</li> </ol>
<b><u>Persistent Oils</u></b> - Does not meet the distillation criteria for Non-persistent oil.	
<b>II</b>	Specific Gravity of less than 0.85
<b>III</b>	Specific Gravity equal to or greater than .85 and less than .95
<b>IV</b>	Specific Gravity equal to or greater than .95 and less than or equal to 1.0
<b>V</b>	Specific Gravity greater than 1.0

Tables in Appendix A of the Plan summarize the resulting planning volumes for the terminal. The volumes are the greater derived from the EPA or USCG/ OSPR guidelines for Oil Groups I, II, III, IV, and V based on the facility location in a nearshore/inland area. Calculations for the spill volumes are located at the end of this section.

#### **401.1 Average Most Probable (Small) Discharge**

The average most probable discharge is defined by EPA as less than or equal to 50 barrels, not to exceed the EPA worst case discharge.

The USCG average most probable discharge is the lesser of 50 barrels or 1 percent of the volume of the USCG worst case discharge.

*For the Richmond Refinery/ Long Wharf Terminal the Average Most Probable Discharge volume is considered 50 barrels.*

#### **401.2 Maximum Most Probable (Medium) Discharge**

The maximum most probable discharge is defined by EPA as 857 barrels or 10% of the capacity of the single largest aboveground storage tank, whichever is less.

USCG defines this discharge as the lesser of 1,200 barrels or 10 percent of the volume of the USCG worst case discharge, which is 15,587 bbls. (Group 1 oils).

*For the Richmond Refinery/ Long Wharf Terminal, the maximum most probable discharge is considered to be 1,200 bbls.*

#### **401.3 Reasonable Worst Case Discharge**

##### OSPR

The Reasonable Worst Case (RWC) discharge volume is defined by California Regulations (14 CCR §817.02(d)(1)) as the portion of the line fill capacity which could be lost during a spill, taking into account the availability and location of the emergency shut-off controls, plus the amount which may be “reasonably expected” to be released during emergency shutoff of the transfer if a hose ruptures. The calculations may take into account the effect of any safety devices and automatic controls.

The RWC discharge volume for this facility is based on Group III oils, due to their greatest transfer rate and applicable line volume. Refer to calculations for pipeline spill volumes located at the end of this section.

*The Reasonable Worst Case spill volume for the Richmond Refinery/ Long Wharf is considered to be 31,135 barrels.*

#### **401.4 Worst-Case Discharge**

##### EPA

Under EPA requirements, the worst case discharge is defined as follows:

- 1) The capacity of all aboveground storage tanks at the facility without adequate secondary containment, plus
- 2) 100% of the capacity of the largest single above ground storage tank within a secondary containment area or 100% of the combined capacity of a group of above ground storage tanks permanently manifolded together, whichever is greater if the facility is adjacent (within 1/4 mile) to a navigable water; or
- 3) 100% of the capacity of the largest single above ground storage tank within a secondary containment area or 100% of the combined capacity of a group of above ground storage tanks permanently manifolded together, whichever is greater if the facility is not adjacent to a navigable water.

The facility is a multitank facility. The tanks are not permanently manifolded together. Pursuant to the requirements set forth by the EPA, the Worst Case Discharge Planning Volume Calculations for onshore storage facilities are located in Appendix A of Spill Prevention and Response Plan.

The largest tank (Tank T-3106) used to store crude, Group III, oils has a maximum capacity of 681,157 bbls. The EPA Worst Case Discharge for Group III Oils is therefore is 681, 157 bbls.

For Group I oils, the largest tank (T-3213) within secondary containment used to store Group I oils has a maximum capacity of 365,210 bbls. The Worst Case Discharge for Group I oil is therefore is 365,210 bbls.

**For Group II oils, there are no listed tanks. Not applicable.**

For Group IV oils, the largest tank (T-1451) within secondary containment used to store Groups IV oils has a maximum capacity of 121,519 bbls. The Worst Case Discharge for Groups IV is therefore is 121,519 bbls.

For Group V oils, the largest tank (T-3100) within secondary containment used to store Groups V oils has a maximum capacity of 470,678 bbls. The Worst Case Discharge for Groups V is therefore is 470,678 bbls.

In summary, the potential WCD according to the EPA regulations is Group I oil –365,210 bbls, Group II oil – N/A, Group III oil – 681,157 bbls, Group IV oils – 121,519 bbls, and Group V oil – 470,678 bbls. Refer to Table A-2 of Appendix A.

### USCG

Under USCG requirements, the worst case discharge is defined as the discharge from all piping carrying oil between the marine transfer manifold and the non-transportation-related portion of the facility plus, where applicable, the loss of the entire capacity of all in-line and breakout storage tanks needed for the continuous operation of the pipeline(s) used for the purposes of handling or transporting oil, in bulk, to or from a vessel regardless of the presence of secondary containment.

The USCG WCD volume has been calculated for lines handling of Group I through V oils. The volume is calculated with the associated max. transfer rate during “leak discovery” of 5 minutes and “shutdown” of 1.5 minutes for shutdown and closure of the line valves, plus the line drainage volume for all lines of that oil group.

. The USCG WCD volume is less than that identified for other Group III oils discharges. The recent addition of two Lube transfer pipelines (4R & 5R) at the Richmond Long Wharf has increased the Group III WCD volume calculation. The USCG WCD volumes are summarized as follows:

Group I Oil	15,587 bbls.
Group II Oil	N/A *
Group III Oil	31,135 bbls.
Group IV Oil	4,056 bbls.
Group V Oil	7,850 bbls.

**The largest USCG WCD volume is 31,135 bbls relating to Group III oils.**

*For Richmond Refinery/ Long Wharf Terminal, the overall Worst Case Discharge is 681,157 bbls of Group III Oil, based on 100% of the capacity of the single largest aboveground storage tank within secondary containment.*

## 402 SPILL SCENARIOS

These following scenarios illustrate probable responses to hypothetical spills. The actions are not specifically prescribed procedures for all such events, as the actual response would be dependent on several variables including weather, season, personnel safety and exact circumstances of the spill.

### 402.1 SMALL SPILL (AMPD) SCENARIO

The average most probable (small) discharge could result from:

- Tank overflow,
- Small hose or pipeline leak or rupture, or
- Human error during product handling.

**Scenario** – A vessel in Berth # 1 just started up a discharge of Low Sulfur Waxy Resid (LSWR) to Tank 1899 via the 16-inch Crude line route at no. 7 Pump Station to the 10-inch overhead. A cold slug in the line causes a high pressure shut down on the vessel. Operations while verifying line up discover a leak from the 10-inch overhead line as it crosses over the roadway going to Tank 1899. Approximately 50 bbls. was released to the ground.

- The Operator immediately notifies the Wharf of situation and isolated lines No 7 Pump Station.
- Wharf Control Room notifies Wharf H.O., who then notifies Battalion Chief of situation.
- The Battalion Chief arrives on site and does initial size-up, then performs safety assessment. He immediately calls Plant Protection Dispatcher and requests a First Alert Call-Out.
- Refinery Shift Coordinator does agency notifications.
- The Battalion Chief activates a first response team.
- The Battalion Chief then calls for shoreline clean-up contractors.

## 402.2 MEDIUM SPILL (MMPD) SCENARIO

The maximum most probable (medium) discharge could result from:

- Equipment/valve/leak detection system malfunction,
- Intra-facility pipeline leak or rupture,
- Pump Seal spray leak,
- Small tank leak or rupture, or
- Minor collision at the dock.

**Scenario** - Vessel in Berth # 4 is discharging ANS Crude Oil at a rate of 55,000 BPH via the 36-inch Crude Oil line using P-15 booster pump. The Operator on shift goes down to No. 7 Pump Station to start a pump for another transfer. He discovers a mechanical seal has failed on P-15 and ANS is fanning out around the shaft, discharging approximately 1200 bbls. into the pump area with wind carrying some over the SPCC berm into the bay.

- The Operator immediately notifies the Wharf Control Room to have the vessel shut down its transfer. Then P-15 is shut down via the low flow shutdown device.
- Wharf Control Room notifies Wharf H.O., who then notifies Battalion Chief of situation.
- The Battalion Chief arrives on site and does initial size up, then performs safety assessment. He immediately calls Plant Protection Dispatcher and requests a First Alert Call-Out per Refinery Instruction RI-410 in conjunction with activating the on-water response.
- Refinery Shift Coordinator does Agency Notifications.
- The Battalion Chief has operations immediately start pumping basin to Recovery Oil Tank, and as soon as it is safe to do so, the Operator isolates P-15.
- The Battalion Chief then calls for shoreline clean up contractors.

## 402.3 WORST CASE DISCHARGE (WCD) SCENARIO

The Worst-Case Discharge (WCD) could result from:

- Catastrophic tank failure in adverse weather conditions.

**Scenario** - Operator while making normal rounds in the Quarry Tankfield discovers a rupture in the bottom of Tank 3106 with Crude Oil being released. After further investigation, it was determined the oil was flowing from the surrounding tank basins to B – Basin (a SPCC Basin). It was also discovered that the double-block motor operated valves and blinds were left in the open position. This allowed approximate 74,000 bbls of crude oil to be released to the bay.



- The Operator immediately notifies the Wharf and confirms closing both of the MOV's, stopping the source to the bay. The Wharf H.O. and Battalion Chief are immediately notified.
- The Battalion Chief arrives on site and does an initial size-up and safety assessment and immediately calls for Plant Protection Dispatcher and requests a second alert Call-Out per Refinery Instruction RI-410.
- Refinery Shift Coordinator does Agency Notifications.
- The Battalion Chief has operations immediately start to transfer stock out of Tank 3106.
- Battalion Chief activates OSRO's
- The Battalion Chief then initiates a first response team, which is then supported by additional resources.

### **403 RESPONSE ANALYSIS**

Based on the planning volumes discussed in Section 401, adequate response equipment capability is demonstrated provided in Appendix C of this Plan. These tables are based on (onsite) equipment, and equipment and personnel from outside contractors including MSRC. Equipment lists are provided in Appendix C of the Plan

#### **403.1 On Water Recovery**

The OSPR Regulations require that each facility demonstrate the ability to provide on-water response resources with specific recovery rates, within specified time frames. The resources identified must be under contract and all recovery rates must be calculated based on the de-rated capacity for each major piece of equipment and skimming system. This facility has the resources necessary to respond to a worst case discharge as required by OSPR. This capability is demonstrated in Appendix I of the SRP, and in the Members' Contract with MSRC.

#### **403.2 Shoreline Response**

In addition to on-water recovery, a facility must identify sufficient contracted shoreline response resources to respond to the Shoreline Response Planning Volume. In the case of the Richmond Long Wharf, this Planning Volume is 31,135 bbls.

Shoreline response will be handled by contract resources through their written service agreement with MSRC. Sufficient personnel and equipment are available to respond to the Shoreline Response Planning Volume. The techniques and guidelines for shoreline response are set forth in Section 4440 and 4610 of the Area Contingency Plan. Supplemental contract resources are available through the facility and Corporate resources.

**403.3 Group V Response**

This facility handles the transfer of some Group V Oils. As indicated in Appendix A, the Worst Case Discharge for Group V Oils is 7,850 bbls. Pursuant to the OSPR Regulations, specific response resources have been identified to address a Group V spill. At this time no reasonable technologies have been identified for the containment and recovery of submerged (Group V) oil in San Francisco Bay. Chevron will continue to evaluate the development of new technology working in conjunction with MSRC and the Area Contingency Planning Process. In the interim, there are various types of equipment which can assist during a Group V spill response effort. This equipment is primarily associated with dredging activities and a list of equipment is provided in Appendix C.

**403.4 On-Site Containment**

This facility is required to have spill response equipment on site sufficient to contain 50 bbls of spilled product. The Long Wharf has the resources to meet this requirement as indicated in the on-site equipment list provided in Appendix C.

**403.5 Non Cascadable Equipment**

OSPR requires each facility to identify non-cascadable equipment (recovery equipment which may not be moved from the risk zone without the formal approval of the OSPR Administrator or the Federal On-Scene Coordinator. The resources of MSRC summarized in Appendix C and in that organization's equipment lists provide adequate non-cascadable equipment that is available to Chevron.

**FIGURE 400-2****RICHMOND WHARF “GROUP I” OIL LINES -WCD CALCULATION**

\* Maximum Flow Rates

9 WHF 5500 BPH	5 WHF 3000 BPH	16" DSL 7500 BPH
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\*\* Total Line Drainage

3 Gas OOS	1-8 GAS 550 BBLs	PEARL 380 BBLs	5 WHF 1250 BBLs	8 WHF 575 BBLs	9 WHF 1200 BBLs	10 WHF 1200 BBLs
11 WHF 1150 BBLs	12 WHF 1200 BBLs	16" DSL 1504 BBLs	16" JET 3600 BBLs	12" Tetramer 1150 BBLs		

Maximum Time to Discover Release (5 minutes)

0.083 hours

Maximum Time to Shut Down (90 seconds)

+ 0.025 hours

0.108

\* Maximum Flow Rates

x 16,000 BPH

1,728

\*\* Total Line Drainage

+ 13,759 BBLs

Group I WCD

15,487 BBLs

\* Based on maximum probable pumping combination

\*\* All Group I Wharf lines

**FIGURE 400-3**  
**RICHMOND WHARF “GROUP II” OIL LINES -WCD CALCULATION**

\* Maximum Flow Rates

N/A

\*\* Total Line Drainage

N/A

Maximum Time to Discover Release (5 minutes)

0.083 hours

Maximum Time to Shut Down (90 seconds)

+ 0.025 hours

0.108

\* Maximum Flow Rates

x 0 BPH

0

\*\* Total Line Drainage

+ 0 BBLs

Group II WCD

0 BBLs

\* Based on Maximum probable pumping combination

\*\* All Group II Wharf Lines

**FIGURE 400-4**  
**Richmond Wharf “Group III” Oil Lines -WCD Calculation**

\* Maximum Flow Rates

100 NEUT 3500 BPH	240 NEUT 3500 BPH	500 NEUT <b>3000 BPH</b>	36" CRD 55000 BPH
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\*\* Total Line Drainage

100 NEUT 706	240 NEUT 854 BBLs	500 NEUT 675 BBLs	2 F/O 1100 BBLs	3 F/O 1100 BBLs	4 F/O 1100 BBLs
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4 F/O Duplicate	30" CRD 5690 BBLs	16" CRD 1821 BBLs	36" CRD 8743 BBLs	3-8 GAS 600 BBLs	<b>4R</b> <b>400 BBLs</b>
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<b>5R</b> <b>840 BBLs</b>	7R 485 BBLs				
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Maximum Time to Discover Release (5 minutes)  
Maximum time to Shut Down (90 seconds)

0.083 hours  
+ 0.025 hours  
0.108

\* Maximum Flow Rates

x **65,000 BPH**  
7,020

\*\* Total Line Drainage

+ **24114 BBLs**

Group III WCD

**31,135 BBLs**

\* Based on Maximum Probable Pumping Combination

\*\* All Group III Wharf Lines

**FIGURE 400-5**  
**Richmond Wharf “Group IV” Oil Lines -WCD Calculation**

\* Maximum Flow Rates

2 F/O	4 F/O
3500 BPH	3500 BPH

\*\* Total Line Drainage

2 F/O	3 F/O	4 F/O
1100 BBLs	1100 BBLs	1100 BBLs

Maximum Time to Discover Release (5 minutes)	0.083	hours
Maximum Time to Shut Down (90 seconds)	+ 0.025	hours
	0.108	
* Maximum Flow Rates	x 7000	BPH
	756	
** Total Line Drainage	+ 3300	BBLs
Group IV WCD	4056	BBLs

\* Based on Maximum Probable Pumping Combination  
 \*\* All Groups IV Wharf Lines

**FIGURE 400-6**  
**Richmond Wharf “Group V” Oil Lines -WCD Calculation**

\* Maximum Flow Rates

30" CRD
20,000 BPH

\*\* Total Line Drainage

30" CRD
5690 BBLs

Maximum Time to Discover Release (5 minutes)	0.083	hours
Maximum Time to Shut Down (90 seconds)	+ 0.025	hours
	0.108	
* Maximum Flow Rates	x 20,000	BPH
	2,160	
** Total Line Drainage	+ 5690	BBLs
Group V WCD	7850	BBLs

\* Based on Maximum Probable Pumping Combination

\*\* All Groups V Wharf Lines

## **500 TRAINING AND DRILLS**

### **501 TRAINING**

#### **501.1 General**

Experienced, well-trained people are essential for successful implementation of the SPERP. An ongoing training and drills program is carried out at the Chevron Richmond Refinery including the RLW. In addition to maintaining maximum familiarity with all aspects of the SPERP, the training and drills program is intended to provide members of the Oil Spill Response Team with the basic knowledge, skills and practical experience necessary to achieve safe and effective spill response operations in accordance with the SPERP.

A Federal Occupational Safety and Health Administration (OSHA) rule, Hazardous Waste Operations and Emergency Response (HAZWOPER) sets minimum training and/or competency requirements for people associated with an oil spill emergency.

Table 500 (Minimum Training Requirements for Chevron Oil Spill Response Organization) summarizes both the HAZWOPER, Incident Command System and spill response training requirements by position.

#### **501.2 Skilled Support Personnel and Specialist Employees**

Personnel, including non-Chevron personnel, whose skills are needed temporarily to perform immediate support work (such as dump truck drivers, crane operators, technical specialists, etc.) may not be required to meet the HAZWOPER training requirements discussed previously. However, these personnel must be briefed concerning the potential hazards and their duties to be performed at the site prior to participating in response operations. They shall receive instruction in the use of any safety and personal protective equipment needed and be provided with all other appropriate safety and health precautions. The Site Safety Representative shall perform these briefings and instructions per 29CFR1910.120(q)(4). .

#### **501.3 HAZWOPER Training Certification and Documentation**

Chevron will certify that the Chevron Richmond Refinery/RLW Oil Spill Response Team members assigned to all levels have received the required training, or equivalent. Records will be kept with initial and refresher training documentation. These records will be maintained at the facility for three (3) years.

Initial training and the method used to satisfy the refresher training/competency demonstration requirement must be documented in writing for each employee trained for spill response. This documentation shall include outlines of the material taught and the method used to demonstrate an employee's competence.

The Chevron Site Safety Representative will ascertain and document that contract personnel used during a spill response have received the required training, or equivalent, and are competent.

#### **501.4 On-Site Equipment Training**

Boom deployment boat operators and deck hands are typically drawn from a personnel pool of terminal operators from the Long Wharf and Transfer & Blending (T&B), Plant Protection, the Fire Brigade and contractors. Everyone has been trained to a minimum of HAZWOPER Operations Level and is refreshed annually. As part of their routine job at the dock, terminal personnel are trained in boat operation, safety and boom deployment. Other personnel are trained during routine boom deployment exercises.



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**Table 500 Minimum Training Requirements for Chevron Oil Spill Response Organization**


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<b>Incident Command Position</b>	<b>HAZWOPER Level</b>	<b>ICS Level</b>	<b>Spill Response Training or Experience</b>	<b>Routine Job Function</b>
<ul style="list-style-type: none"> <li>Incident Commander or Deputy Incident Commander (Also able to fulfill any Operations position)</li> </ul>	Incident Commander	ICS-400	Spill Response Training either during actual oil spill responses or during formal training and drills. They will participate in some form of drill annually.	Members of Refinery Management Team (including Area Business Unit Managers and Battalion Chiefs).
<ul style="list-style-type: none"> <li>Safety Officers</li> </ul>	Operations	ISC-100/200	Oil Spill and HAZMAT Training as part of their normal job. They will participate in spill drills at least triennially.	Refinery Personnel assigned as Safety Engineers.
<ul style="list-style-type: none"> <li>Public Affairs Officers</li> </ul>	None Required	ICS-100/200	Personnel in these positions perform these functions as a routine part of their job. They will participate in spill drills at least triennially.	Refinery and Corporate personnel who have Public Affairs duties as part of their routine job function. (i.e. Public Affairs Manager, members of the Environmental Affairs Section, members of the Corporate Public Affairs Staff, etc.).
<ul style="list-style-type: none"> <li>Operations Section Personnel Supervising Field Operations (i.e., Operations Section Chiefs, Protection and Recovery Group Supervisors, etc)</li> </ul>	Operations or General Site Worker 40	ICS-300	Spill Response Training either during actual oil spill responses or during formal training and drills. They will participate in some form of drill or exercise annually.	Members of Refinery Management Team who have volunteered to assist in an oil spill.

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**Table 500 Minimum Training Requirements for Chevron Oil Spill Response Organization**


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<b>Incident Command Position</b>	<b>HAZWOPER Level</b>	<b>ICS Level</b>	<b>Spill Response Training or Experience</b>	<b>Routine Job Function</b>
<ul style="list-style-type: none"> <li>Operations Section Personnel- Surveillance Branch Directors &amp; non-field Directors, Unit Leaders, Group Supervisors.</li> </ul>	None Required	ICS-300	Spill Response Training during drills. They will participate in some form of drill annually.	Refinery personnel who have volunteered to assist in an oil spill.
<ul style="list-style-type: none"> <li>Planning Section Chiefs, Short and Long Range Plan Branch Directors, Situation Branch Directors and Documentation Branch Directors</li> </ul>	None Required	ICS-300	Spill Response Training during drills. They will participate in some form of drill or exercise annually.	Refinery personnel who have volunteered to assist in an oil spill.
<ul style="list-style-type: none"> <li>Environmental Branch Directors and Environmental Unit Leader</li> </ul>	As Required	ICS-300	Spill Response Training during drills and review of specific Environmental Functions on the job. Members will participate in spill drills at least triennially	Refinery Personnel assigned to the Environmental Affairs Section of the Richmond Refinery.
<ul style="list-style-type: none"> <li>Wildlife Restoration and NRDA Unit Leaders</li> </ul>	As Required	ICS-300	Spill Response Training through the Chevron Corporation Functional Team. They will participate in spill drills at least triennially.	Members of the Chevron Corporation Environmental Functional Team.
<ul style="list-style-type: none"> <li>Hazardous Waste Unit</li> </ul>	Operations	ICS-100/200	On the job training in Hazardous Waste Handling. They will participate in spill drills at least triennially.	Refinery Personnel assigned to the Hazardous Waste Section of the Utilities/ Environmental Area Business Unit.

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**Table 500 Minimum Training Requirements for Chevron Oil Spill Response Organization**


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<b>Incident Command Position</b>	<b>HAZWOPER Level</b>	<b>ICS Level</b>	<b>Spill Response Training or Experience</b>	<b>Routine Job Function</b>
• Logistics Section Chiefs	None Required	ICS-300	They will participate in spill drills at least triennially.	Refinery personnel who have volunteered to assist in an oil spill.
• Security, Communications, Contracting and Purchasing Branch Directors and their Branches and Units	None Required	Supervisors ICS-300  Non-Supervisors ICS-100/200	Personnel in these positions perform these functions as a routine part of their job within the refinery. They will participate in spill drills at least triennially.	Refinery personnel assigned to the security staff, contracting staff, communications staff and purchasing staff within the refinery.
• Finance Section Chiefs and Comptrollers	None Required	Supervisors ICS-300  Non-Supervisors ICS-100/200	Personnel in these positions perform these functions as a routine part of their job within the refinery. They will participate in spill drills at least triennially.	Refinery personnel assigned to the Accounting Group within the refinery.
• Legal Representatives	None Required	ICS-100/200	Personnel in these positions perform these functions as a routine part of their job within the refinery. They will participate in spill drills at least triennially.	Corporate members of Chevron's Legal Staff.

**Table 500 Minimum Training Requirements for Chevron Oil Spill Response Organization**

<b>Incident Command Position</b>	<b>HAZWOPER Level</b>	<b>ICS Level</b>	<b>Spill Response Training or Experience</b>	<b>Routine Job Function</b>
<ul style="list-style-type: none"> <li>Medical Liaison and Medical Unit</li> </ul>	None Required	Supervisors ICS-300  Non-Supervisors ICS-100/200	Personnel in these positions perform these functions as a routine part of their job within the refinery. They will participate in spill drills at least triennially.	Corporate members of Chevron's Medical Staff.
<ul style="list-style-type: none"> <li>Insurance Liaison and Unit</li> </ul>	None Required	Supervisors ICS-300  Non-Supervisors ICS-100/200	Personnel in these positions perform these functions as a routine part of their job within the refinery. They will participate in spill drills at least triennially.	Corporate members of Chevrons Insurance Group.
<ul style="list-style-type: none"> <li>Human Resources Unit Leader</li> </ul>	None Required	Supervisors ICS-300  Non-Supervisors ICS-100/200	Personnel in these positions perform these functions as a routine part of their job within the refinery. They will participate in spill drills at least triennially.	Refinery personnel assigned to the Human Resources Staff.

### 501.5 Instructors

Instructors who provide HAZWOPER and ICS training must have academic credentials and/or instructional experience necessary to demonstrate competent instructional skills with a good command of the subject matter.

### 501.6 Training on SPERP

Responders who are required to be familiar with the Spill Preparedness and Emergency Response Plan will be required to review the plan and demonstrate proficiency in areas of the plan, which they are responsible for implementing.

### 501.7 Other Training

Other training will be made available when, in the judgment of the Environmental Response and Preparedness Coordinator, it is appropriate. Operations personnel involved in Off-shore Operations or On-shore Protection should attend an Oil Spill Response School, such as offered at Texas A&M (or equivalent). As videos or other written material become available they are shared with the appropriate members of the Oil Spill Response Team. Records on all training received by the team are kept at the facility

## 502 SPERP DRILLS AND EXERCISES

### 502.1 DESCRIPTION OF DRILLS AND EXERCISES

Drills serve to evaluate the thoroughness and effectiveness of the emergency response component of the SPERP by testing under simulated conditions. All elements of the SPERP will be tested during drills over a 3- year period. The following summarize the individual drill and exercise elements:

- A. A quarterly drill of the notification procedures for facility personnel, the Qualified Individuals, the response contractors and the oil spill management team.
- B. An annual unannounced drill (either emergency procedures or spill management team).
- C. Equipment deployment drills now have 5 specific objectives to meet and will only be required by the State annually if these objectives are met during the first 6 months of the year. An unannounced emergency procedures drill requiring equipment deployment may be credited toward one of the semi-annual drills.
- D. An annual tabletop drill of the Spill Management Team.
- E. Triennially, a Reasonable Worst Case Discharge size drill utilizing all appropriate resources.

The drills may be designed to exercise either individual components of the plan or the entire response plan. Such drills, individually or in combination, shall ensure that the entire plan is exercised at least once every three years.

Chevron has adopted the National Preparedness for Response Exercise Program (PREP) guidelines and the Guidance Document on “Drills and Exercises” from the Department of Fish and Game Office of Oil Spill Prevention and Response which have been incorporated into the drill program described above. The Federal PREP drill year corresponds to the calendar year, beginning with January 1, 1994. Exercises conducted in 1993 may be credited toward meeting the objectives necessary to exercise the entire response plan in a triennial cycle. Each annual exercise must be conducted within a 12-month period. Chevron assumes responsibility for ensuring that the exercise objectives were met according to the PREP guidelines, and shall self-certify each exercise for respective credit due.

### 502.2 DRILLS AND EXERCISE PLANNING

Drill and Exercises will be scheduled in advance and generally prepared at the beginning of each year. The schedule will be coordinated with the Area Committee. Federal (USCG/ EPA) and state (OSPR) representatives will be advised of the schedule and their participation coordinated according to the exercise objectives.

To receive credit from the OSPR for an exercise, OSPR must be invited to participate in both Equipment Deployment and Spill Management Team Tabletop exercises. Notice should be on the form provided at the end of this Section, or provide similar information in another form.

The minimum advance notification of State (OSPR) authorities for spill drills and exercises is summarized in the following table:

TYPE OF EXERCISE	ADVANCE NOTICE TO OSPR	MIN. ANNUAL REQMT.
Tabletop Exercise – In-State	30 days	Annual
Tabletop Exercise – Out of State	90 days	Annual
Equipment Deployment	30 days	○ First 6 months of the calendar year
Full Scale Combination Exercise	60 days	Optional
Area Exercise	120 days	Optional
Internal Unannounced Exercise	30 days	Annual

- The Equipment Deployment Drill shall take place in the first six months of the calendar year and is evaluated on a pass/fail basis. All five objectives must be successfully met. If the drill fails, a second drill shall be required in the second six months of the calendar year.

If drill credit is desired from the California Department of Fish and Game-OSPR, the following criteria must be met:

- A. The Administrator of OSPR should be invited to participate.
- B. After each drill a critique of the drill should be forwarded to the Administrator.
- C. The Administrator will determine whether the elements of the plan were adequately tested during the drill.
- D. The Administrator will issue a report after the drill to Chevron evaluating the performance of the facility's participants.

### 502.3 DRILL DOCUMENTATION

Complete records, sufficient to document participation in drills by facility personnel, spill response personnel and contracted response resources identified in this SPERP will be maintained for five (5) years following the completion of the drill. Records will be made available upon request.

Proper documentation includes documentation, which lists the exercise conducted, the objectives met and the results of the exercise evaluation. This documentation must be in writing and signed by a responsible individual within the organization.

#### **502.4 CONTRACTOR DRILLS**

Contractors will be included in drills on a frequency and to an extent deemed appropriate to ensure the available and serviceability of their resources.

In addition, Chevron commits to having their designated oil spill response contractors participate in the testing and exercising of the Geographic Response Plan strategies for those sites that they have identified at risk in the Offsite Consequence Analysis.

Spill response contractors, which Chevron relies on for primary response, are the following:


**Marine Spill Response Corporation (MSRC)**

#### **502.5 DRILLS AND EXERCISE FORMS**

Copies of reference forms **and hyperlinks** are included at the end of this Section. These include forms for reporting planned exercises, recording and evaluating drills, and advising of Lessons Learned.

Click link for the entire form


Exercise Notification Form – DFW 1964 (PDF)

 State of California – Department of Fish and Wildlife <b>EXERCISE NOTIFICATION</b> DFW 1964 (Rev. 04/01/14) Page 1		<input type="button" value="SAVE"/> <input type="button" value="PRINT"/>	
Company Name:			
Company Address:			
Facility/Vessel Name:			
OSPR Contingency Plan #:			
Point of Contact:		Phone:	
		Cell:	
Email:		Fax:	
Exercise Date :		Exercise Time:	
Exercise Location:			
Type of Exercise: <input type="checkbox"/> Table Top/Functional <input type="checkbox"/> Equipment Deployment <input type="checkbox"/> (1 <sup>st</sup> 6 Months) <input type="checkbox"/> (2 <sup>nd</sup> 6 Months) <input type="checkbox"/> Unannounced <input type="checkbox"/> Other			
Level of Participation (optional): <input type="checkbox"/> Facility/vessel personnel <input type="checkbox"/> National Team <input type="checkbox"/> Regional Response Team <input type="checkbox"/> International Team			
Level of OSPR ICS Participation (optional): <input type="checkbox"/> IC <input type="checkbox"/> Planning <input type="checkbox"/> Operations <input type="checkbox"/> Other <input type="checkbox"/> ICS software to be used Type: <input type="checkbox"/> None			
OSPR Design Team Participation (optional): <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sensitive Site Location, if any (Site Number/Site Name):			
<div style="border: 1px solid black; height: 60px; width: 100%;"></div>			
Objectives – Use numbers described in the <a href="#">California Code of Regulations, Title 14, Section 820.01 (e-g)</a> :			
<div style="border: 1px solid black; height: 40px; width: 100%;"></div>			
Other Participants (Agencies, OSRO's, etc.):			
<div style="border: 1px solid black; height: 40px; width: 100%;"></div>			
Email to <a href="mailto:osprdrills@wildlife.ca.gov">osprdrills@wildlife.ca.gov</a>		Please call (916) 445-9338 or email if not on the calendar within 5 days. Thank you.	




Click link for the entire form

Equipment Deployment Evaluation Form – DFW 1965 (PDF)

 State of California – Department of Fish and Wildlife <b>EQUIPMENT DEPLOYMENT EVALUATION</b> DFW 1965 (Rev. 04/01/14) Page 1		SAVE	PRINT
	Deployment Date:		
	Facility/vessel:		
	Deployment location(s):		
	Time started:		
	Time ended:		
	<b>Objective 1 – Notifications:</b> Actual notifications shall be made to the California Office of Emergency Services and shall be initiated and documented at the start of the drill. <input type="checkbox"/> Yes <input type="checkbox"/> No		
	<b>Objective 2 – Staff Mobilization:</b> Assemble sufficient staff to safely and effectively deploy the spill response equipment. <input type="checkbox"/> Sufficient <input type="checkbox"/> Insufficient		
	<b>Objective 3 – Safety:</b> A safety briefing shall be conducted prior to deployment. <input type="checkbox"/> Yes <input type="checkbox"/> No		
	<b>Objective 4 – Equipment Deployment:</b> Equipment shall be deployed to meet the immediate containment strategies outlined in their plan. <input type="checkbox"/> Yes <input type="checkbox"/> No		
	<b>Objective 5 – Communication:</b> Appropriate communications shall be provided to direct operations. <input type="checkbox"/> Yes <input type="checkbox"/> No		
1.	<b>Facility owned equipment:</b> <input type="checkbox"/> Deployed by facility personnel <input type="checkbox"/> Deployed by OSRO Which OSRO was used to deploy the equipment?		
2.	List type and amount of all equipment (e.g., boom size, overall height in inches and skimmers) deployed and number of support personnel employed:		
3.	Describe goals of the equipment deployment. Did it utilize strategies of the response plan? (Attach a sketch or photo of equipment deployments and booming strategies):		


Click link for the entire form

Tank Vessels, Nontank Vessels and Marine Facilities Tabletop Exercise – Evaluator Worksheet-DFW 1966 (PDF)

 State of California – Department of Fish and Wildlife <b>TANK VESSELS, NONTANK VESSELS, AND MARINE FACILITIES TABLETOP EVALUATOR WORKSHEET</b> DFW 1966 (Rev. 04/01/14) Page 1		SAVE	PRINT
1.	Name of Facility or Vessel Plan:		
2.	Contingency Plan Number:		
3.	Name of Evaluator:		
4.	Date of Exercise:		
5.	Location of Exercise or actual response:		
6.	Spill Management team used (check one): <input type="checkbox"/> 1. Local response spill management team. <input type="checkbox"/> 2. Dedicated company spill management team. <input type="checkbox"/> 3. Professional spill management service (name of the spill management service used).		
7.	Time started: Time completed:		
8.	Response plan scenario used (check one): <input type="checkbox"/> Most probable discharge: <input type="checkbox"/> Maximum most probable discharges: <input type="checkbox"/> Reasonable worst case discharge: <input type="checkbox"/> Worst case discharge: Size of (simulated) spill (bbbls/gals):		
9.	List of exercise objectives. Instructions: Mark the objectives involved in this exercise. Provide comments, detailing Objectives that worked well or that were deficient.		
Met	<input type="radio"/> 1) NOTIFICATIONS: Actual notifications shall be made to the Plan Holder's Oil Spill Response Organization and Qualified Individual, the California Office of Emergency Services and the National Response Center, and shall be initiated and documented at the start of the drill/exercise.		
Not Met	<input type="radio"/>		
Not Tested	<input type="radio"/>		
Not Observed	<input type="radio"/>		

Click link for the entire form

Request for Credit Form – DFW 1967 (PDF)

 State of California – Department of Fish and Wildlife <b>REQUEST FOR DRILL/EXERCISE CREDIT</b> DFW 1967 (Rev. 04/01/14) Page 1		<input type="button" value="SAVE"/> <input type="button" value="PRINT"/>	
Name of Facility or Vessel Plan:			
Plan Number(s):		OSPR Representative(s):	
Date of Drill/Exercise:	Location of Drill/Exercise:		
Address:		Scenario Coordinate:	Latitude:
			Longitude:
Name of Submitter:		Address:	Phone:
			E-mail:
Type of Drill or Exercise			
Tabletop/Functional <input type="checkbox"/>	Equipment Deployment <input type="checkbox"/> 1 <sup>st</sup> 6 Mos. of yr. <input type="checkbox"/> 2 <sup>nd</sup> 6 Mos. of yr.	Unannounced <input type="checkbox"/>	Actual Spill <input type="checkbox"/>
Other <input type="checkbox"/>			
Tank Vessels, Nontank Vessels, Marine Facilities – Check the Objectives exercised during tabletop exercises or spills.			
<input type="checkbox"/> 1. Notifications	<input type="checkbox"/> 8.3 Vessel Emergency Services**	<input type="checkbox"/> 9.3.1 Waste Management	
<input type="checkbox"/> 2. Staff Mobilization	<input type="checkbox"/> 8.4 Lightering**	<input type="checkbox"/> 9.3.2 Applied Response Technology (ART)	
<input type="checkbox"/> 3. Incident Command System (ICS)	<input type="checkbox"/> 8.5 Firefighting	<input type="checkbox"/> 9.4 Documentation	
<input type="checkbox"/> 4. Unified Command (UC)	<input type="checkbox"/> 8.6 Shoreline Protection	<input type="checkbox"/> 9.5 Volunteer Management	
<input type="checkbox"/> 5. Public Information Officer (PIO)	<input type="checkbox"/> 8.7 Wildlife Recovery & Rehabilitation	<input type="checkbox"/> 10. Logistics	
<input type="checkbox"/> 6. Liaison Officer (LNO)	<input type="checkbox"/> 8.8 Safety of Responders and Public	<input type="checkbox"/> 10.1 Communications	
<input type="checkbox"/> 7. Safety Officer (SOFR)	<input type="checkbox"/> 9. Planning	<input type="checkbox"/> 10.2 Personnel Support	
<input type="checkbox"/> 8. Operations (OPS)	<input type="checkbox"/> 9.1 Situation Unit	<input type="checkbox"/> 10.3 *ICP Equipment and Support	
<input type="checkbox"/> 8.1 Source Control	<input type="checkbox"/> 9.2 Resource Unit	<input type="checkbox"/> 11. Finance	
<input type="checkbox"/> 8.2 Assessment	<input type="checkbox"/> 9.3 Environmental Unit		
*ICP-INCIDENT COMMAND POST **VESSEL APPROPRIATE			
Small Marine Fueling Facilities, Mobile Transfer Units, Vessels Carrying Oil as Secondary Cargo – Check the objectives exercised during tabletop exercises or spills.			
<input type="checkbox"/> 1. Notifications	<input type="checkbox"/> 8. Operations	<input type="checkbox"/> 9.2 Resource Unit	
<input type="checkbox"/> 2. Staff Mobilization	<input type="checkbox"/> 8.1 Source Control & Assessment	<input type="checkbox"/> 9.3 Environmental Unit	
<input type="checkbox"/> 3. Incident Command System (ICS)	<input type="checkbox"/> 8.2 Firefighting	<input type="checkbox"/> 9.4 Waste Management and Disposal	
<input type="checkbox"/> 4. Unified Command (UC)	<input type="checkbox"/> 8.3 Containment	<input type="checkbox"/> 9.5 Documentation	
<input type="checkbox"/> 5. Public Information	<input type="checkbox"/> 8.4 Wildlife Recovery & Rehabilitation	<input type="checkbox"/> 10. Logistics	
<input type="checkbox"/> 6. Liaison	<input type="checkbox"/> 9. Planning	<input type="checkbox"/> 10.1 Personnel & Facility Support	
<input type="checkbox"/> 7. Safety	<input type="checkbox"/> 9.1 Situation Unit	<input type="checkbox"/> 11. Finance	
Equipment Deployment			
<input type="checkbox"/> 1. Notifications <input type="checkbox"/> OSRO <input type="checkbox"/> NRC <input type="checkbox"/> Cal OES	<input type="checkbox"/> 3. Safety	<input type="checkbox"/> 5. Communication	
<input type="checkbox"/> 2. Staff Mobilization	<input type="checkbox"/> 4. Equipment Deployment		
Authorized Representatives Name:		Date:	
NOTE: ONE FORM FOR EACH DRILL CONDUCTED IS REQUIRED.			
Please send request via FAX to (916) 327-0907 or email to <a href="mailto:OSPRDRILLS@WILDLIFE.CA.GOV">OSPRDRILLS@WILDLIFE.CA.GOV</a>			

**TABLE 600-1 OIL SPILL RESPONSE PLAN DISTRIBUTION**

RICHMOND REFINERY– Spill Response Plan Copy Distribution		
Copy #	Recipient Name	Response Plan Copy Location Address
1	U.S. EPA	Region IX SFD-9-4 75 Hawthorne Street San Francisco, CA 94105
2	U. S. Coast Guard	Commander US Coast Guard Sector San Francisco Coast Guard Island, Bldg. 14 Alameda, CA 94501-5100  Attn: Port Safety & Security Branch
3	California State Lands Commission Northern California Field Office	750 Alfred Nobel Drive Suite 201 Hercules, CA 94547-1897
4	California State Lands Commission Marine Facilities Inspection & Management Division	200 Golden Shore, Suite 900 Long Beach, CA 90802
5	California State Lands Commission Environmental Planning and Management Division	100 Howe Ave. Suite 100 South Sacramento, CA 95825-8202
6	California Department of Fish and Game  Office of spill Prevention & Response (CCC and BCDC will review copy of plan at OSPR)	1700 K Street, Suite 250 Sacramento, CA 95814
7	DFG/OSPR local office	425-G Executive Court North Fairfield, CA 94534-4019

## **Appendix A**

### **FACILITY SPECIFIC INFORMATION**

## **A-1 FACILITY INFORMATION**

### **LOCATION**

Address: 841 Chevron Way, Richmond, CA 94802-0627

Latitude: 37° 55' -24" North

Longitude: 122° 24' - 39" West

### **OWNER/ OPERATOR**

Chevron Products Company  
(510) 242-2772 (24 hours – Refinery Shift Coordinator)

### **HOURS OF OPERATION**

The Richmond Long Wharf is capable of transferring oil to or from all of the berths simultaneously. The facilities are operated 24 hours a day, 7 days a week.

## **A-1.1 DESCRIPTION OF STARTUP AND CURRENT OPERATIONS**

The Chevron Richmond Refinery is located within the City of Richmond in Contra Costa County. The facility borders San Francisco Bay and San Pablo Bay on about 2,900 acres of land. It is about 25 miles from San Francisco.

The Refinery began operations under the ownership of the Pacific Coast Oil Company in 1902. In 1905, Standard Oil Company of California (now Chevron Corporation) acquired the refinery and continued operations on the site. Over the decades, the Richmond Refinery has steadily expanded to meet the needs of the changing demands for petroleum products. Currently, the refinery produces primarily gasoline, jet, diesel fuels, and lubricants.

The refinery includes a marine terminal, process units, and storage tank farms. Tanker ships receive the crude oil for the refinery. The marine terminal, known as the "Long Wharf", has berths for four tankers and two barges. The wharf is located at the end of a long causeway reaching about a mile from the Contra Costa County shoreline. Discharged product is transferred ashore via pipes along trestles alongside the causeway to tanks located in several tankfields ashore. They are used to store crude oil and other products and intermediates for the refinery processes. The tanks, subject to SPCC, are located within secondary containment berms around the surrounding hillsides.

The refinery processes about 240,000 barrels per day (bpd) of crude oil that is received over the Wharf. Other receipts at the Long Wharf include about 40,000 bpd. of feed and/or blending stocks. Refined products, in general, are shipped out over the Wharf and by pipeline to Chevron Marketing terminals.

The Chevron Richmond Refinery and RLW location is indicated on Figure A-1.

Figure A-2 shows the general layout of the Chevron Richmond Refinery. Figure A-3 shows the Richmond Long Wharf and the boundary between the transportation related and non-transportation related portions of the facility.

There are four deep-water berths on the west side:

- Berth #1 is 950 feet long with a project depth of 50 feet at MLLW.
- Berth #2 is 650 feet long with a project depth of 40 feet at MLLW.
- Berth #3 is 700 feet long with a project depth of 40 feet at MLLW.
- Berth #4 is 1,050 feet long with a project depth of 50 feet at MLLW.

They are numbered from 1 through 4 from south to north.

There are two inner berths: 9 and 11. They are used primarily for barge loading or discharging. Project depth is 18 feet at MLLW. The fender-to-fender width is 132.5 feet.

Berth No. 2 is fitted with 4-, 6-, and 8-inch hoses for cargo transfer. Berth No. 1 has two 12-inch and two 16-inch Chicksan loading arms. Berth No. 3 has two 8-inch and four 12-inch Chicksan loading arms. Berth No. 4 has two 12-inch and three 16-inch Chicksan loading arms.

Table A-1 identifies the refinery tankage that may pose a risk to the bay waters if ruptured

Other facilities are defined as the remaining refinery areas not covered in the SPCC Plan. These areas are geographically located such that they could not reasonably be expected to discharge oil to navigable waters.

Spills occurring in these areas will drain to the effluent treating system that operates under an NPDES permit.

## A-1.2 DESCRIPTION OF SUBSTANTIAL EXPANSION

The wharf has been in operations since the earliest days of the Richmond Refinery. It was originally a wooden structure supported on timber piles and modified in 1946 with a concrete wharf and causeway supported on deeper concrete piles. Three buildings and a concrete repair wharf were also built in 1946. In 1974, the wharf was modified to accommodate larger vessels, Berth 1 was expanded and Berth 4 was constructed.

There are two pipeways adjacent to the causeway from the shoreline to the wharf. The older pipeway is part of the original causeway structure, while the newer LSFO pipeway is a separate pile supported structure build in 1974.

The following major improvements have been completed since 1974:

- 1984 Installation of permanent oil spill boom at Berth 1 and 4
- 1990 Replacement of the 20" crude pipeline with a 30" crude line
- 1991 Installation of oil spill boom along the full length of wharf.
- 1991 Installation of Long Wharf Emissions Reduction project
- 1996 Installation of new 12" Tetramer Pipeline
- 1996-7 Installation of new light products line (16"/ 12")
- 1997-2001 Seismic retrofit to entire Wharf and causeway
- 2003-04 Electrical infrastructure upgrade

The tank fields that have risk of spill to navigable waters include the Office Hill Tankfield, SP Hill Tankfield, Quarry Tankfield, and Poleyard Tankfield. The tanks in the office hill were constructed in two phases spanning from 1903 to 1914 and from 1941-1961. Most of these tanks were later dismantled in the early 1990's. Today there are four in-service tanks in Office Hill. These tanks primarily store Distillate Oil, Fuel Oil, and Recovered Oil.

Approximately half of the tanks in SP Hill were constructed during the 1920's with the remaining tanks being constructed between 1938 and 1966. During the 1990's several tanks in SP Hill were dismantled and replaced with new tanks and there is one new tank under construction. There are currently 12 in-service tanks in SP Hill. These tanks primarily are used for storage of finished products such as gasoline, jet, and diesel.

Original construction in the Quarry Tankfield began in 1973 and continued until 1985. The products stored in the Quarry Tankfield are lube oils and crude oils. Several lube oil tanks are currently permitted for construction in 1998. There are 15 in-service tanks in this tankfield.

Original tank construction in the Poleyard was begun approximately between the years of 1915 and 1920. New tanks were added to the Poleyard during the mid 1980's and early 1990's. Intermediate feedstocks are the primary products stored in the Poleyard. There are currently 19 in-service tanks in the area.

#### **A-1.4 TRANSFER OPERATIONS**

The usual practice is to berth tankers from 27,000 DWT to 130,000 DWT in Berth No. 1. Sea going barges and tankers to 40,000 DWT are berthed in Berth No. 2, tankers from 17,000 DWT to 50,000 DWT in Berth No. 3, and tankers from 50,000 DWT up to 150,000 DWT in Berth No. 4. The inner Berths No. 9 and No. 11 are used for barges. On occasions, a freighter-tanker will load oil in Berth No. 2.

The current daily throughput of product across the Long Wharf is approximately 390,000 bbls/day. The average frequency is five transfer operations per day. The basic range of transfer duration is 1 to 30 hours.

#### **A-1.5 MATERIAL INFORMATION**

For each product transferred, the generic or chemical name and cargo information can be obtained from the **Safety Data Sheet (SDS)** located in the Wharf Operations Manual. **SDS binders are maintained separately from this plan. Binders are located at the Richmond Long Wharf and available upon request.**

#### **A-1.6 EQUIPMENT LOCATION**

The locations of safety, fire protection and oil spill protection equipment, mooring areas, transfer locations, pumps, valves, vents, drip pans and the control room are shown on drawings in Appendix A (Maps) at the back of this Section.

#### **A-1.7 AUTOMATIC CONTROLS**

There are no remotely-operated or automatic controls associated with normal Long Wharf cargo operations. Cargo operations performed under vapor recovery conditions have some degree of automation for emergency shutdown conditions, but cargo operations



remain under direct control of a Wharf Operator. There are no autonomous spill safety/alarm systems currently installed at the Long Wharf.

### **A-1.8 EQUIPMENT TESTING, INSPECTION, AND MAINTENANCE**

Wharf pipelines, cargo hoses, loading arms and pressure relief valves are all tested as required by CCR Article 5.5, Sections 2560 →2570. In addition to this rigorous inspection and testing program, all arms, hoses, and pipelines undergo annual visual inspection by Refinery Integrated Machinery Inspection (IMI) personnel, as well as periodic checks by Wharf Operations personnel. Equipment found to be inoperable is taken out of service, Lock Out-Tag Out (LOTO) as per refinery policy, and repaired as needed. The inspection and testing cycle for Wharf equipment is as follows:

- Pipelines: Annual visual; triennial detailed inspection, radiograph testing, pressure testing.
- Hoses: Per-use visual inspection; annual detailed inspection, pressure, vacuum, and visual testing.
- Pressure Relief Devices: Annual removal, pop and re-set.
- Arms: Per-use pre-flight test & visual inspection; annual Preventive Maintenance and inspection; Triennial detailed inspection and pressure test.

## **A-2 WEATHER AND TIDES**

The maximum tidal range is approximately 9 feet and the mean range is 4.2 feet. Tidal currents in the wharf area can be very strong. They generally run in a northerly and southerly direction. More detailed environmental data (summarizing wind and current information) is located in Appendix H.

The visibility in this area of San Francisco Bay is generally fair to excellent, except for evening and morning fog in the summer months. In the winter, morning or tule fogs frequently occur. The winter fogs are generally more dense than those of summer. The local weather is usually moderate, with average temperatures ranging between 40°F and 85°F.

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**Figure A-1. Facility Location**

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**Figure A-2. Refinery Plot Plan**

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**Figure A-3. Delineation of EPA and USCG Jurisdiction**

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**Table A-1 Refinery Tanks, Contents and Capacities (page 1 of 3)**

<b>Tank ID#</b>	<b>Stocks</b>	<b>Year Built</b>	<b>Roof Type</b>	<b>OPA 90 Oil Group No.</b>	<b>Storage Cap. (bbls.)*</b>
397	Mixed Cutter	1917	Fixed	III	65,377
399	Sour H <sub>2</sub> O/Rec Oil	1989	Ext. Floating	III	102,261
634	Hydrobate		Ext. Floating	I	55,096
679	JHT (Jet)	1949	Ext. Floating	I	86,663
954	Gasoline	1922	Ext. Floating	I	60,089 Out of Service
955	Propylene Tetramer	1922	Ext. Floating	I	61,433
956	Tetramer	1922	Ext. Floating	I	65,533
957	Tetramer	1922	Fixed	I	75,090
979	Cutter	1938	Fixed	I	76,721
984	Cutter	1941	Fixed	I	18,859
990	Gasoline	1949	Ext. Floating	I	84,892
991	Gasoline	1923	Ext. Floating	I	106,851
992	Gasoline	1958	Ext. Floating	I	93,519
1287	Hydrobate	1940	Ext. Floating	I	58,811
1289	Toluene	1940	Ext. Floating	I	29,974
1292	Diesel	1941	Fixed	I	111,729
1296	Gasoline component	1941	Ext. Floating	I	152,661
1451	Fuel Oil	1941	Ext. Floating	IV	121,519 Out of Service
1455	Lube	1945	Fixed	III	31,924
1456	Lube	1945	Fixed	III	27,873
1492	DHT Feed	1944	Fixed	I	52,462
1493	DHT Feed	1944	Fixed	I	52,280
1504	Recovered Oil	1950	Ext. Floating	III	31,096
1506	Fuel Oil	1952	Ext. Floating	IV	114,940
1514	Gasoline component	1947	Ext. Floating	I	104,602
1518	Jet	1947	Ext. Floating	I	58,983
1687	Gasoline	1952	Ext. Floating	I	138,276
1688	Gasoline	1952	Ext. Floating	I	137,740
1798	Jet	1954	Ext. Floating	I	140,142
1799	Jet	1954	Ext. Floating	I	138,234

Table A-1 Refinery Tanks, Contents and Capacities (Page 2 of 3)					
1899	Gas oil	1943	Fixed	III	141,206
1966	Jet	1947	Ext. Floating	I	45,142
3071	Gasoline	1972	Ext. Floating	I	183,590
3072	Gaso. component	1972	Ext. Floating	I	149,079
3073	Gaso. component	1973	Ext. Floating	I	117,384
3075	Av Gas	1973	Ext. Floating	I	34,022
3076	Rec Oil	1973	Fixed	III	200,000
3074	Gas Oil	1973	Fixed	III	156,533
3100	Crude	1973	Ext. Floating	III	470,678
3101	Crude	1973	Ext. Floating	III	475,478
3102	Unhydrofined FCC Feed	1974	Ext. Floating	III	477,437
3103	Crude	1974	Ext. Floating	III	478,158
3104	Crude	1975	Ext. Floating	III	668,891
3105	Crude	1973	Ext. Floating	III	673,794
3106	Crude	1976	Ext. Floating	III	681,157
3107	Crude	1979	Ext. Floating	III	587,050
3129	Jet	1984	Ext. Floating	I	98,667
3132	TKN Feed or Gasoline	1973	Ext. Floating	III	182,375
3133	Gasoline	1974	Ext. Floating	I	282,493
3134	Gasoline	1975	Ext. Floating	I	182,462
3138	Gas Oil	1974	Ext. Floating	III	185,194
3139	DAO Product	1975	Fixed	V	184,143
3157	Waxy Lube	1995	Fixed	III	75,361
3158	Waxy Lube	1995	Fixed	III	110,541
3159	Waxy Lube	1995	Fixed	III	75,361
3160	Intermediate 100N	1984	Fixed	III	121,778
3161	Intermediate 500 N	1984	Fixed	III	86,210
3162	Intermediate 240 N	1984	Fixed	III	86,326
3163	100 Neutral Oil	1984	Fixed	III	73,664
3164	100 Neutral Oil	1984	Fixed	III	73,633
3165	240 Neutral Oil	1984	Fixed	III	127,608
3166	240 Neutral Oil	1984	Fixed	III	127,591
3167	500 Neutral Oil	1984	Fixed	III	91,263
3168	500 Neutral Oil	1984	Fixed	III	91,159

Table A-1 Refinery Tanks, Contents and Capacities (Page 2 of 3)					
3169	100 Neutral Oil	1994	Fixed	III	201,135
3170	Lube	1994	Fixed	III	96,195
3171	Lube	1994	Fixed	III	96,139
3172	Lube	1994	Fixed	III	51,969
3190	Jet	1990	Ext. Floating	I	128,571
3180	Gas. component	1990	Ext. Floating	I	150,000
3189	Gasoline	1992	Ext. Floating	I	211,825
3191	Av Gas	1994	Ext. Floating	I	130,000
3194	Gas Oil	1992	Ext. Floating	III	209,152
3195	Diesel	1994	Fixed	I	113,964
3196	Gas Oil	1992	Ext. Floating	III	208,936
3197	NHT Feed	1992	Ext. Floating	I	208,535
3202	NHT Feed	1993	Ext. Floating	I	91,371
3215	Diesel	1996	Fixed	I	129,186
3216	HCO	1998	Fixed	III	116,817
3217	Diesel	1998	Fixed	I	114,318
3218	HCO	1998	Fixed	III	90,317
3220	Sour Water	2001	Ext. Floating	IV	183,465
3222	Gas Oil	2002	Fixed	III	205,266
3223	Pentane		Sphere	I	
3224	Pentane		Sphere	I	
3225	Sour Water		Ext. Floating	IV	99,800
3226	Sulfur		Fixed	V	
3227	Diesel		Fixed	I	115,000

**Table A-2**  
**Capacities and Pumping Rates for Richmond Long Wharf Pipelines**

Revised 8/98

Lines	Size	Stocks	Capacity (BBLs)	Group #	Estimated Maximum Pumping Rate
REFINED					
1-8 Gas	8"	AvGas/MTBE/Methanol (water soluble)/Toluene	550	I	1500 BPH
5 WHF	12"	AvGas/MTBE/ Methanol	1250	I	3000 BPH
8 WHF	8"	Refine Slops/UNL	575	I	1000 BPH
9 WHF	12"	UNL	1200	I	5500 BPH
10 WHF	12"	MTBE	1200	I	6500 BPH
11 WHF	12"	UNL	1150	I	10,000 BPH
12 WHF	12"	Med. UNL/Sup	1200	I	5000 BPH
Tetramer	12"	Propylene Tetramer	1150	I	2500 BPH
DIESEL & JET					
16" DSL	16"	Diesel (Inc. 1 DB & 2 DB Legs)	1504	I	7500 BPH
16" JET	16"	Jet	3600	I	10000 BPH
LUBES					
500 N	8"	500 Neut	675	III	3000 BPH
240 N	12"	240 Neut	854	III	3500 BPH
100 N	12"	100 Neut	706	III	3500 BPH
FUEL/CRUDE					
2 F/O	12"	IBF/BFO/Cutter	1100	III/IV	3500 BPH
3 F/O	12"	IBF/BFO/ Cutter	1100	III/IV	3000 BPH
4 F/O	12"	IBF/BFO/ Cutter	1100	III/IV	3500 BPH
30" CRD	30"	VGO/ Cutter / Crude	5690	III	23,000 BPH
30" CRD	30"	HSFO/LSWR	5690	V	23,000 BPH
16" CRD	16"	Crude /VGO/LSWR/Cutter	1821	III	7000 BPH
36"	36"	Crude	8743	III	70,000 BPH
CUTTER					
3-8 GAS	8"	Cutter	600	III	1500 BPH



### A-3.0 DISCHARGE DETECTION SYSTEMS

#### A-3.1 FACILITY DRAINAGE DESCRIPTION

##### **Office Hill Tankfield:**

Drainage from diked storage areas is as follows:

All the tanks on Office Hill are properly diked so that drainage and/or oil spillage is directed to either Impounding Basin 4A, or 4. Refer to the attached maps. The primary basin at 1899 Tank is drained to its respective Impounding Basins by gravity flow through corrugated metal pipe. Basin 4A is engineered to contain 38,596 bbls before it drains to Impounding Basin 4. Basin 4A capacity is 38,596 which includes the volume that would stay in Tank 1899 if tank failed and levels reach equilibrium. The remaining oil will spill to Basin 4, the secondary containment area.

Drainage from undiked areas is controlled as follows:

Impounding Basin 4 is kept pumped out by deep well sump pumps that operate on level control. Discharge is set to either Tank 1504 or the refinery's recovered oil system.

The pipe way from the concrete dam at No. 7 Pump Station to the refinery long wharf is a "transportation-related facility" and, as such, is not subject to SPCC regulations.

##### **Poleyard Tankfield:**

Drainage from diked storage areas is controlled as follows:

Most of the tanks in the Poleyard have small local impoundage basins. These basins are designed to overflow into No. 13 Separator, or the North Yard Impound Basin (for stormwater) and ultimately contained into No. 1 Oxidation Pond. All tanks in the Poleyard will flow to No. 13 Separator and then into No. 1 Oxidation Pond except for Tanks 3132, 3133, 3189, and 3134. They are contained in No. 23 Basin located North of Tank 3133. No. 23 Basin holds 346,999 bbls.

Drainage from undiked areas is controlled as follows:

The basin and Tank 679 are drained via underground culvert to No. 13 Separator and are held in No. 1 Oxidation Pond.

All basins and pipe trenches drain to No. 13 Separator into No. 1 Oxidation Pond.

The Lube Oil Plant pipe way adjacent to No. 13 Separator is contained by the No. 13 Separator outlet ditch that drains to No. 1 Oxidation Pond. Other pipe ways in the Lube Oil and Isomax Plants are also contained by No. 1 Oxidation Pond.

**SP Hill Tankfield:**

Drainage from diked storage areas is controlled as follows:

All the tanks in this area are properly diked so that any drainage and/or oil spillage is routed to either Impounding Basin 5, 6, 7, 8, 8A, or 9. Refer to the drawings in this section. Properly sized corrugated steel pipe is provided to direct large spills to an impound basin by gravity flow.

Drainage from undiked areas is controlled as follows:

Sufficient containment for some of the SP Hill tanks is provided only if 5, 6, and 7 Basins combined volume is available. As a result, the drain from Basin 5 to Basin 6 and from Basin 6 to Basin 7 must be kept closed, except when draining rainwater to Basin 7. The drain valves shall be checked for tight shut-off, quarterly.

Basins 7, 8, and 9 can be drained directly to the Bay. All water that accumulates in these basins is sampled and analyzed in compliance with the requirements established by the Regional Water Quality Control Board. If the samples meet strict quality standards, the water is suitable for discharge directly to the Bay. If the water fails these tests, it is pumped back through the refinery's effluent treating system.

After the tests indicate that the water can be drained to the Bay, the water valves are opened and the drainage begins. The contents of the basin are continuously monitored during the discharge. Any change in the appearance of the basin water requires an immediate halt to the draining.

When the draining is stopped, 7 and 8 Basins are isolated from the discharge system by 2 closed valves with an open bleeder in between. 9 Basin, because it is located outside the refinery proper, is isolated in the same way, except the bleeder is closed after a tight shut-off is verified for the two block valves. This double block (and bleed on 7 and 8 Basins) system provides isolation when the basins are not being drained.

The block valves are tested quarterly for positive shut-off, unless the system is blinded. If either valve is found to be leaking, it shall be replaced or repaired within 30 days.

### A-3.3 DISCHARGE DETECTION

The procedure for supervising the drainage of rainwater from secondary containment into a storm drain or open watercourse is as follows:

#### **Office Hill Tankfield:**

The Impounding Basins at the Office Hill Tankfield are connected either to the refinery closed drainage system or to the oil recovery system. In this area, there is no storm water drainage to open waters. Basins are monitored and drained by the No. 7 Pump Station operator.

#### **Poleyard Tankfield:**

Drainage water is all routed to No. 13 Separator and the effluent system. During heavy rainfall events, rainwater may be diverted to #1 Oxidation Pond. #1 Oxidation Pond can be drained directly to the Bay. All water that accumulates in the basin is sampled and analyzed in compliance with the requirements established by the Regional Water Quality Control Board. If the samples pass strict quality standards, the water is suitable for discharge directly to the Bay.

After the tests indicate that the water can be drained to the Bay, the water valves are opened and the drainage begins. The contents of the basin are continuously monitored during the discharge. Any change in the appearance of the basin water requires an immediate halt to the draining.

#### **SP Hill Tankfield:**

The water is tested per RWQCB requirements and, if it meets the quality standards, is discharged only while the basin is being continuously, visually monitored. If the appearance of the basin water changes during discharge, the discharge is immediately halted and the change investigated.

### A-3.4 SECONDARY CONTAINMENT

#### **OFFICE HILL TANKFIELD**

As shown on the map in this section, four basins provide secondary impoundage. Tank 1899 is contained partially in the primary basin around Tank 1899 and in Impounding Basin 4. The impounding volume around Tank 1899 is 38,596 bbls and the impounding volume for Impounding Basin 4 is 129,040 bbls for a total of 167,636 bbls. Tanks 1506, 1504, and 1451 are contained in Basin No. 4. Basin No. 4 has a volume of 129,040 bbls. Tank 1451 holds 133,010 bbls. However, the last 6' of oil will be contained inside the tank when the basin and tank level off. Impounding Basin 1 has an 88,200-bbl volume and Basin 2 has a 60,746-bbl volume for a total of 148,946 bbls. All secondary basins are fed by gravity flow.

Earth walls with impervious clay cores are utilized. Concrete walls are used both as containment and diversion. Where concrete walls cross pipelines, the lines are sleeved with steel collars sealed against oil leakage. A spill from Tank 1899 would flow to its respective secondary impoundages via corrugated steel pipe.

**Poleyard Tankfield:**

A remote impoundage basin of approximately 1,000,000 barrels is provided for the Poleyard Tankfield. This basin is a large earth diked area. The No. 13 Separator and No. 1 Oxidation Pond provides secondary containment for the drainage system and tanks.

**SP Hill Tankfield:**

As shown by the drawings in this section, drainage from all the tanks is by gravity flow to one or more impounding basins. In addition to earth fill, steel and/or concrete walls are employed to direct the flow to the basins. Basin 5 has a capacity of 62,218 bbls, Basin 6 has a capacity of 24,591 bbls, Basin 7 has a capacity of 85,571 bbls, Basin 8 has a capacity of 587,987 bbls, and Basin 9 has a capacity of 821,161 bbls.

**A-3.5 DRAINAGE MAPS**

Topographic maps are provided in this section. They provide information on the relative drainage pattern and land contours around the tanks and lines on shore.

**INSERT DRAINAGE MAPS**

## **A-4.0 INSPECTION**

### **A-4.1 TANKS**

Above ground storage tanks are inspected according to API-653 guidelines. A sample Master Tank Inspection list is provided in Section A4.4 which identifies the service, status, last inspection, and next inspection information.

### **A-4.2 SECONDARY CONTAINMENT**

All SPCC Plan Basins and Tanks are visually inspected each day. The area operator is responsible to complete these tasks as part of their daily routine. Each of the four crews within the Blending and Shipping Area Business Unit (B&S ABU) is responsible to complete the SPCC Plan inspection sheets on a monthly rotating basis. The schedule noting which crew is responsible is located on the Refinery Information Server under the B&S Operating Manual Section, Routine Duties area. The routine duties also contain the SPCC log sheets that are printed out, filled in and passed on to the B&S ABU Office Assistant for filing. The log sheets are filed in room 14, B&S ABU Office.

Samples of these forms are in Section A-4.5 and A-4.6.

### **A-4.3 RESPONSE EQUIPMENT**

Spill response equipment owned and operated by the facility is subject to a regular program of inspection and exercise to ensure operational condition. The program is comprised of daily, weekly, monthly, quarterly, and semi-annual components.

Sample forms used for inspection checklist and record are provided in Section A-4.7. The records are maintained at the Oil Spill Response Center and availability upon request.

#### **A-4.4**

### **TANK INSPECTION SUMMARY**

**A-4.5**

**TANK/ SECONDARY CONTAINMENT INSPECTION**



**A-4.6**

**TANKFIELD SECONDARY CONTAINMENT INSPECTION**

**A-4.7**

**SPILL RESPONSE EQUIPMENT INSPECTION**

## **SECONDARY CONTAINMENT INSPECTION**

**B-1 GOVERNMENTAL AGENCIES**

<b>FEDERAL AGENCIES</b>	<b>PHONE NO.</b>
<b>USCG Sector San Francisco</b>	<b>(415) 399-3530 (24/7)</b>
<b>National Response Center</b>	<b>(800) 424-8802</b>
Environmental Protection Agency (Region 9)	800-300-2193 (24 hrs)
US Army Corps of Engineers	(415) 503-6700
<b>STATE AGENCIES</b>	<b>PHONE NO.</b>
CCC California Coastal Commission / BCDC Oil Spill Program	(415)-904-5250 (415)-201-5792 pgr.
California Department of Fish and Game (OSPR)	(916) 358-1312 (888) 334-2258 (CAL Tip)
California Department of Parks & Recreation	(800) 548-1431
California Department of Toxic Substances Control	800-72TOXIC (728-6942), in an emergency dial 911
California Highway Patrol Contra Costa Area Office	(925) 646-4980
<b>California Warning Center (CalEMA) [formally Cal OES]</b>	<b>(800) 852-7550 or (916) 845-8911</b>
California State Lands Commission	(562) 590-5201
CALTRANS	(510)-286-6359 (District 24-hr. phone line)
<b>LOCAL AGENCIES</b>	<b>PHONE NO.</b>
Bay Area Air Quality Management District (BAAQMD)	(800)-334-6367 (Complaint line recording)
Contra Costa County Health Services Div.	(925) 677-6700
Regional Water Quality Control Board	(510) 622-2369
Richmond Fire/Police Central Dispatch	Pri: 911 Alt: (510) 620-6901

# APPENDIX C EQUIPMENT LISTS

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## **C-1 GENERAL**

The response equipment available to the Chevron Richmond Refinery/RLW consists of equipment supplies owned and stored on Chevron property, and those obtained from Marine Spill Response Corporation (MSRC). Chevron Richmond Refinery is a member of MSRC; refer to Appendix I for details of the Service Agreement. The USCG San Francisco Bay and Delta Area Contingency Plan also provides a list of resources in the region. A complete list of MSRC's equipment can be found on their web page using the following link: [https://www-msrc-org-documents.s3.amazonaws.com/major-equipment-list/MSRC\\_Major\\_Equipment\\_List.pdf](https://www-msrc-org-documents.s3.amazonaws.com/major-equipment-list/MSRC_Major_Equipment_List.pdf) but is also included in table C-2. Table C-3 lists MSRCs approved/contracted helicopter assets.

## **C-2 CONTAINMENT EQUIPMENT REQUIRED FOR 50 BBL SPILL**

Chevron and MSRC equipment will generally be used for spill responses to the Average Most Probable Discharge (AMPD) (50 bbl) and Maximum Most Probable Discharge (MMPD) (1200 bbl) planning volumes. As required under the OSPR Regulations, the RLW must have equipment and personnel capable of containing a 50-bbl spill on-site. The following equipment meets this requirement. At all times there are enough trained personnel on the Wharf to effectively deploy this equipment:

- Permanently installed petro-barrier boom running the full length of the face of the Long Wharf and select locations bisecting the pipe, causeway and lab area.
- 4700 feet harbor boom located in the RLW Oil Spill Command Center.
- 1- Mobile Trailer with 1000 ft of boom stored at Berth 1.
- Miscellaneous absorbent material (minimum of 10 cubic feet of a combination of sweeps, sheets and boom).
- Minimum of 2 spill response boats (each carries at least 800ft of harbor boom).

The above minimum equipment will be drawn from the inventory of equipment located at the RLW (Table C-1) and is only a portion of available equipment stored at the refinery.

Response equipment for the Richmond Long Wharf Worst Case Discharge (WCD) would be drawn from on-site equipment and MSRC resources. To respond to a WCD from the Refinery Tank Field (required by EPA under OPA 90) would require incremental resources from the MSRC sites throughout the Western Region. An equipment list for an MSRC response to Richmond is located in table C-2 of this SPERP.

## **C-3 SHORELINE CLEANUP CONTRACTOR**

The facility's prime shoreline cleanup contractor is MSRC, and that organization's subcontractors. MSRC has sufficient manpower and resources under contract (heavy equipment, shallow draft boats, hand tools and sorbent products) to respond to the shoreline cleanup planning volume. MSRC has a staff of health and safety specialists to train the "surge labor" required to respond to the shoreline cleanup planning volume.

## **C-4 AERIAL TRACKING**

MSRC has confirmed availability of aerial tracking resources through contract or other approved means per 33 CFR 1543.1045(j)(4). A list of assets is provided in table C-3.

Along with the aircraft, MSRC is the resource provider for the pilots and trained personnel to support oil spill response operations; for planning purposes, these resources are capable of arriving at the site of the discharge in advance of the arrival of response resources identified for Tiers I, 2, and 3 planning timeframes. This includes observation personnel trained in the protocols of oil spill reporting and assessment.

## **C-5 EQUIPMENT LISTS**



**Table C-1**  
**Chevron Oil Spill Equipment**  
**Richmond Long Wharf Oil Spill Command Center (RLWOSCC)**  
*\*Equipment will be inspected and operational status logged on a quarterly basis.\**

Item	Quantity	Location
Crowley Petro Barrier Boom (24" Fence type boom)	1000 ft.	8 Warehouse
Harbor Boom Trailer (18" overall)	1000 ft.	Berth 1
Harbor Boom (18" overall)	4700 ft.	RLW OSCC
Sorbent Boom	16 Bales	RLW OSCC/ Berth 1
Sorbent Sweeps	20 – 100ft Sections	RLW OSCC/ Berth 1
Sorbent Sheets	20 Bales	RLW OSCC/ Berth 1
Sorbent Boom	20 Units	8 Warehouse
Sorbent Sweeps	20 Units	8 Warehouse
Sorbent Sheets	40 Units	8 Warehouse
<u>Orange Boat (CVX 1)</u> 34 ft. Munson w/ Twin 250 motors & 1500 of 18" harbor boom, Radar, GPS Nav Plotter, VHF-FM Marine & company radio.	1	A & B Berth
<u>Blue Boat (CVX 2)</u> 26 ft. Munson w/ Twin 150 motors & 800 of 18" harbor boom, VHF-FM Marine & company radio.	1	A & B Berth
<u>Green Boat (CVX 3)</u> 26 ft. Munson w/ Twin 150 motors & 800 of 18" harbor boom, VHF-FM Marine & company radio.	1	A & B Berth
<u>Red Boat (CVX 2)</u> 22 ft. Munson w/ Twin 150 motors & equipment to do 10 anchor set-ups, VHF-FM Marine & company radio.	1	A & B Berth
15 ft. Wood Workboats with 25 HP motor	2	Lab Pad Area
16 ft. Aluminum Workboats with 25 HP motor	5	RLW OSCC
14 ft. Boston Whaler with 40 HP motor	1	RLW OSCC
14 ft. Boston Whaler with 25 HP motor	1	Richmond R&G boat harbor
17 ft. Boston Whaler with 50 HP motor	1	RLW OSCC
Spare outboard motors (10/15/25 HP)	2 -25 HP 2 – 15 HP 1 – 10 HP	RLW OSCC
Mobile Response Trailer with 1200 ft. of harbor boom.	1	Richmond R&G boat harbor
Mobile Response Trailer with 600 ft. of harbor boom & 12 ft. skiff	1	Old Fire House
Mobile Boom Roller	1	RLW OSCC

## MSRC Equipment List

[https://www-msrc-org-documents.s3.amazonaws.com/major-equipment-list/MSRC\\_Major\\_Equipment\\_List.pdf](https://www-msrc-org-documents.s3.amazonaws.com/major-equipment-list/MSRC_Major_Equipment_List.pdf)

### California Area Capability

#### Eureka Public Marina, CA

	Skimmers (EDRC bblday)	Boom	Dispersants	Storage	Small Boats & Other Equipment
RECON II Support Vessel		2,000 ft 18" Curtain Internal Foam			
Shallow Water Barge Shallow Water Barge (self propelled 400 bbl)	1 Stress II (9,043 bblday)	60 ft 20" Curtain Internal Foam		400 bbl Onboard Storage	
Site Totals:	1 Skimmers (9,043 bblday)	2,000 ft Boom		400 bbl Storage	

#### Eureka, CA

	Skimmers (EDRC bblday)	Boom	Dispersants	Storage	Small Boats & Other Equipment
BOOMER I Support Vessel		1,200 ft 20" Curtain Internal Foam			
Eureka, CA Equipment Site MSRC Equipment Site	1 CA Pond (400 bblday) 1 Desmi Terminator (3,017 bblday) 1 Desrol 250 (2,328 bblday) 2 Queensboro (1,810 bblday)	5,000 ft 10" Curtain Internal Foam 2,000 ft 18" Curtain Internal Foam 2,000 ft 20" Curtain Internal Foam 1,000 ft 24" Tidal Seal	660 gal. Corexit 9500	1 57 bbl Fasttank (57 bbl) 1 59 bbl Towable Storage Bladder (59 bbl) 2 Mini-Barge (200 bbl)	1 Shallow Water Push Boat (28' Munson) 1 Shallow Water Push Boat (28' Munson) 2 12' Punt Boats 1 16' Workboat 1 22' Workboat
Site Totals:	5 Skimmers (7,575 bblday)	11,200 ft Boom	660 gal. Dispersants	316 bbl Storage	

#### Fields Landing, CA

	Skimmers (EDRC bblday)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Fields Landing Boat Yard Equipment Site MSRC Equipment Site	1 Desmi Ocean (3,017 bblday) 1 Queensboro (905 bblday)	120 ft 20" Curtain Internal Foam		2 Shallow Water Barges (non-self propelled 400 bbl) (800 bbl)	
Site Totals:	2 Skimmers (3,922 bblday)	120 ft Boom		800 bbl Storage	

#### Sacramento, CA

	Skimmers (EDRC bblday)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Sacramento, CA Equipment Site MSRC Equipment Site	2 Skin Pac (480 bblday)	1,000 ft 10" Curtain Internal Foam 2,000 ft 18" Curtain Internal Foam			
Site Totals:	2 Skimmers (480 bblday)	3,000 ft Boom			

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## Cordelia, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Cordelia, CA Equipment Site		1,000 ft 10" Fence			
MSRC Equipment Site		700 ft 6" Curtain Internal Foam			
Site Totals:		1,700 ft Boom			

## Vallejo, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
SPELL SPOILER I Oil Spill Response Vessel (OSRV)	2 Mase III (12,300 bbl/day)			90 bbl Onboard Storage	
GLOBAL BOOM BARGE Workboat		6,400 ft 10" Curtain Internal Foam			
Site Totals:	2 Skimmers (12,300 bbl/day)	6,400 ft Boom		90 bbl Storage	

## Benicia, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
20' MUNSON Support Vessel					
20' MUNSON Support Vessel					
MINI SPOILER I Support Vessel	1 Mase I (3,588 bbl/day)			18 bbl Onboard Storage	
MINI SPOILER II Support Vessel	1 Mase I (3,588 bbl/day)			18 bbl Onboard Storage	
MUNSON 1 (21') Support Vessel		1,800 ft 10" Curtain Internal Foam			
MUNSON 2 (21') Support Vessel		1,800 ft 10" Curtain Internal Foam			
Site Totals:	2 Skimmers (7,176 bbl/day)	3,600 ft Boom		36 bbl Storage	

## Martinez, CA (Tesoro)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Martinez, CA (Tesoro) Equipment Site		12,250 ft 10" Curtain Internal Foam		4 Mini-Barge (400 bbl)	
MSRC Equipment Site		2,000 ft 18" Curtain Internal Foam			
		9,000 ft 20" Curtain Internal Foam			
Site Totals:		23,250 ft Boom		400 bbl Storage	

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## Martinez Marina, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
SENTINEL Oil Spill Response Vessel (OSRV)	1 Mase III (8,150 bbl/day)			90 bbl Onboard Storage	
RAIDER II Support Vessel		1,500 ft 18" Curtain Internal Foam			
RAIDER IV Support Vessel		1,500 ft 18" Curtain Internal Foam			
Shallow Water Barge Shallow Water Barge (self propelled 400 bbl)	1 GT-185 Skimmer (with Adapter) (1,371 bbl/day)	60 ft 20" Curtain Internal Foam		400 bbl Onboard Storage	
Site Totals:	2 Skimmers (7,521 bbl/day)	3,000 ft Boom		490 bbl Storage	

## Martinez, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Martinez Equipment Site MSRC Equipment Site	7 4" Oil Mop (255 bbl/day) 1 6" Oil Mop (48 bbl/day) 2 Oil Hwag (1,372 bbl/day) 1 Skim Pac (240 bbl/day) 2 Wallop Mini (595 bbl/day)			1 12 bbl Towable Storage Bladder (12 bbl) 5 500 bbl Towable Storage Bladders (2,500 bbl) 2 57 bbl Fastanks (114 bbl) 1 9 bbl Fastanks (9 bbl)	6 12' Punt Boats
Site Totals:	13 Skimmers (2,522 bbl/day)			2,635 bbl Storage	

## Concord, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Concord, CA Equipment Site MSRC Equipment Site			330 gal Corexit 9500		1 Dispersant Aircraft King Air SE-40
Site Totals:			330 gal Dispersants		

## Stockton, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Stockton, CA Equipment Site MSRC Equipment Site		1,000 ft 10" Curtain Internal Foam 1,000 ft 16" Fence			
Site Totals:		2,000 ft Boom			

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## Richmond, CA (Richmond Chevron)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Richmond Chevron MSRC Equipment Site	1 WP-1 (3,017 bbl/day)	2,400 ft 18" Curtain Internal Foam 7,500 ft 20" Curtain Internal Foam 1,850 ft 43" Curtain Self-Inflatable 2,420 ft 67" Curtain Pressure-Inflatable	9,735 gal Corexit 9500	4 500 bbl Towable Storage Bladders (2,000 bbl)	2 Shallow Water Push Boats (28' Munson)
Site Totals:	1 Skimmers (3,017 bbl/day)	14,170 ft Boom	9,735 gal Dispersants	2,000 bbl Storage	

## Richmond, CA (Richmond Phillips 66)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Richmond Phillips 66 MSRC Equipment Site	1 QT-185 Skimmer (with Adapter) (1,371 bbl/day) 3 Queensboro (2,715 bbl/day)	5,740 ft 20" Curtain Internal Foam 10,000 ft 24" Total Seal		4 Shallow Water Barges (non-self propelled) (400 bbl) (1,600 bbl)	
Site Totals:	4 Skimmers (4,086 bbl/day)	15,740 ft Boom		1,600 bbl Storage	

## Richmond, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
<b>PACIFIC RESPONDER</b> Responder Class Oil Spill Response Vessel (OSRV)	1 Stress I (15,840 bbl/day) 1 Transrec 350 (10,567 bbl/day)	2,640 ft 67" Curtain Pressure-Inflatable		4,000 bbl Onboard Storage	1 32' Munson Support Boat 1 Level C - X-Band Radar Oil Detection and Thermal Infrared Camera System 1 Fast Advancing Encounter System #4
<b>MSRC 451</b> Oil Spill Response Barge (OSRB)	1 QT-185 (1,371 bbl/day) 1 Stress III (9,043 bbl/day)	660 ft 67" Curtain Pressure-Inflatable		45,000 bbl Onboard Storage	
<b>RECOVERY I</b> Oil Spill Response Vessel (OSRV)	2 Lori Lora (19,810 bbl/day) 1 Stress I (15,840 bbl/day)	3,000 ft 18" Curtain Internal Foam 104 ft 60" Fence		2,215 bbl Onboard Storage	
<b>SPILL SPOILER II</b> Oil Spill Response Vessel (OSRV)	2 Marco III (12,300 bbl/day)			90 bbl Onboard Storage	
<b>SPILL CHASER</b> Fast Response Vessel (FRV)	2 LORI Brush Pack (5,000 bbl/day)	2,000 ft 18" Curtain Internal Foam 40 ft Tapered Fence		50 bbl Onboard Storage	
<b>RAIDER I</b> Workboat		1,000 ft 18" Curtain Internal Foam			
<b>RAIDER III</b> Workboat		1,000 ft 18" Curtain Internal Foam			
<b>Richmond, CA Warehouse</b> MSRC Equipment Site	1 Crucial Disc 55/30 (5,671 bbl/day) 1 Wallop W-1 (1,920 bbl/day) 1 Wallop W-2 (1,920 bbl/day) 1 Wallop W-4 (3,562 bbl/day)	350 ft 24" Total Seal 330 ft 67" Curtain Pressure-Inflatable		1 29 bbl Towable Storage Bladders (29 bbl) 4 59 bbl Towable Storage Bladders (236 bbl)	1 Emergency Communications Package (ECP) 1 9M RHIB Boat 1 Level B - Aerostat with Optical and Thermal Infrared Camera System 1 Fast Advancing Encounter System #2
Site Totals:	15 Skimmers (102,850 bbl/day)	11,124 ft Boom		51,620 bbl Storage	

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### Richmond, CA (Richmond Pier)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Richmond Pier MSRC Equipment Site		1,700 ft 18" Curtain Internal Foam 2,640 ft 6" Curtain Pressure-Inflatable			
Site Totals:		4,340 ft Boom			

### Oyster Point, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Oyster Point, CA Equipment Site MSRC Equipment Site		1,000 ft 10" Curtain Internal Foam 1,000 ft 6" Curtain Internal Foam			
Site Totals:		2,000 ft Boom			

### Redwood City, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Redwood City, CA Equipment Site MSRC Equipment Site		1,000 ft 10" Curtain Internal Foam 1,000 ft 6" Curtain Internal Foam			
Site Totals:		2,000 ft Boom			

### Port Hueneme, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
MSRC 328 Oil Spill Response Barge (OSRB)	1 Q-T-185 Skimmer (with Adaptor) (1,371 bbl/day) 1 Stress I (15,840 bbl/day)	660 ft 6" Curtain Pressure-Inflatable		32,000 bbl Onboard Storage	
RECOVERY 2 Oil Spill Response Vessel (OSRV)	2 Q-T-185 (2,742 bbl/day) 2 Lori Lons (9,908 bbl/day)	2,000 ft 20" Curtain Internal Foam 400 ft 24" Curtain Internal Foam 1,500 ft 40" Curtain Self-Inflatable 154 ft 60" Fence		2,215 bbl Onboard Storage	
Port Hueneme, CA Equipment Site MSRC Equipment Site		2,000 ft 18" Curtain Internal Foam 500 ft 6" Curtain Internal Foam			
Site Totals:	6 Skimmers (29,961 bbl/day)	7,164 ft Boom		34,215 bbl Storage	

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## El Segundo, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
El Segundo, CA Equipment Site MSRC Equipment Site	1 OT-185 Skimmer (with Adapter) (1,371 bbl/day) 2 Queensboro (1,810 bbl/day) 1 Walosep W4 (3,562 bbl/day) 1 WP-1 (3,017 bbl/day)	180 ft 20" Curtain Internal Foam 6,000 ft 24" Tidal Seal 9,000 ft 67" Curtain Pressure-Inflatable		3 Shallow Water Barges (non-self propelled) (400 bbl) (1,200 bbl) 1 100 bbl Mini Barge (100 bbl) 1 500 bbl Towable Storage Buoiler (500 bbl)	
Site Totals:	5 Skimmers (9,700 bbl/day)	15,200 ft Boom		1,800 bbl Storage	

## Long Beach, CA (W/H & Yard)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Long Beach, CA WH Yard Equipment Site MSRC Equipment Site	1 Elastec Drum (288 bbl/day) 4 OT-185 (5,494 bbl/day) 1 OT-185 Skimmer (with Adapter) (1,371 bbl/day) 3 Lori Bow Collect (7,431 bbl/day) 2 Lori Side Collector (4,954 bbl/day)	8,400 ft 18" Curtain Internal Foam 600 ft 20" Curtain Internal Foam 2,700 ft 24" Curtain Internal Foam 1,000 ft 30" Curtain Self-Inflatable 5,400 ft 43" Curtain Self-Inflatable 110 ft 67" Curtain Pressure-Inflatable		9 10 bbl Fasttanks (90 bbl) 2 100 bbl Mini Barges (200 bbl) 4 57 bbl Fasttanks (228 bbl) 2 8 bbl Portable Storage Tanks (16 bbl)	3 Shallow Water Push Boats (20' Munson) 1 Shallow Water Push Boats (20' Munson) 1 Emergency Communications Package (ECP) 1 10' Workboat 1 Level A - Aerial Optical and Thermal Infrared Imaging System
Site Totals:	11 Skimmers (19,528 bbl/day)	18,210 ft Boom		534 bbl Storage	

## Long Beach, CA (Berth 85 - Tesoro)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Long Beach, CA (Berth 85) Tesoro Equipment Site MSRC Equipment Site			12,870 gal Corexit 9500		
Site Totals:			12,870 gal Dispersants		

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### Long Beach, CA (Berth 53 & 57)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
OCEAN LIBERTY Oil Spill Response Vessel (OSRV)	1 GT-185 Skimmer (with Adapter) (1,371 bbl/day) 1 Stress I (15,840 bbl/day)	2,000 ft 26" Curtain Self-Inflatable 2,250 ft 43" Curtain Self-Inflatable 200 ft 43" Curtain Self-Inflatable 180 ft 48" Fence 150 ft 60" Fence		2,089 bbl Onboard Storage	
RESPONSE 3 Oil Spill Response Vessel (OSRV)	1 Lamor 50 (1,603 bbl/day)			15 bbl Onboard Storage	
RECON 3 Workboat		1,000 ft 43" Curtain Self-Inflatable			
RECON 4 Workboat		1,000 ft 43" Curtain Self-Inflatable			
Long Beach, CA Berth 53 & 57 Equipment Site MSRC Equipment Site	1 Komara K-12 (275 bbl/day) 1 Queensboro (905 bbl/day)	60 ft 20" Curtain Internal Foam 100 ft 43" Curtain Internal Foam 660 ft 67" Curtain Pressure-Inflatable		1 Shallow Water Barge (non-self propelled) (400 bbl) 1 500 bbl Towable Storage Bladder (500 bbl)	1 18' Workboat
Response 1 MSRC Equipment Site					
Response 2 MSRC Equipment Site					
Site Totals:	5 Skimmers (19,994 bbl/day)	7,600 ft Boom		3,004 bbl Storage	

### Long Beach, CA (Berth 121 - Tesoro)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Long Beach, CA (Berth 121) Tesoro Equipment Site MSRC Equipment Site		6,900 ft 43" Curtain Internal Foam			
Site Totals:		6,900 ft Boom			

### Los Angeles Harbor, CA (Berth 151)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Los Angeles Harbor, CA (Berth 151) Equipment Site MSRC Equipment Site		2,400 ft 36" Curtain Internal Foam			
Site Totals:		2,400 ft Boom			

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### Anaheim Bay, CA

	Skimmers (EDRC bb/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Anaheim Bay Equipment Site MSRC Equipment Site		2,000 ft 10" Curtain Internal Foam 1,500 ft 18" Curtain Internal Foam 3,800 ft 36" Curtain Internal Foam 3,075 ft 6" Curtain Internal Foam			
Site Totals:		10,375 ft Boom			

### Long Beach, CA (Fire Boat Station #15)

	Skimmers (EDRC bb/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Long Beach, CA Fire Boat Station #15 Equipment Site MSRC Equipment Site		1,200 ft 24" Curtain Internal Foam			
Site Totals:		1,200 ft Boom			

### Alamitos Bay, CA

	Skimmers (EDRC bb/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Alamitos Bay Equipment Site MSRC Equipment Site		800 ft 24" Curtain Internal Foam			
Site Totals:		800 ft Boom			

### Terminal Island, CA

	Skimmers (EDRC bb/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
CALIFORNIA RESPONDER Responder Class Oil Spill Response Vessel (OSRV)	1 Stress III (9,043 bb/day) 1 Transac 350 (10,567 bb/day)	2,640 ft 67" Curtain Pressure-Inflatable		4,000 bbl Onboard Storage	1 32' Munson Support Boat 1 Level C - X-Band Radar Oil Detection and Thermal Infrared Camera System 1 Fast Advancing Encounter System #4
30 FT. KVICHAK Kuvchak Marco Skimming Vessel	1 Marco I (3,568 bb/day)			24 bbl Onboard Storage	
Terminal Island, CA Equipment Site MSRC Equipment Site		400 ft 43" Curtain Self-Inflatable 2,640 ft 67" Curtain Pressure-Inflatable			
Site Totals:	3 Skimmers (23,198 bb/day)	5,680 ft Boom		4,024 bbl Storage	

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### Platform Esther (Offshore)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Platform Esther Equipment Site		1,500 ft 43" Curtain Self-Inflatable			
MSRC Equipment Site					
Site Totals:		1,500 ft Boom			

### Platform Eva (Offshore)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Platform Eva Equipment Site		1,500 ft 43" Curtain Self-Inflatable			
MSRC Equipment Site					
Site Totals:		1,500 ft Boom			

### Platform Emmy (Offshore)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Platform Emmy Equipment Site		750 ft 43" Curtain Self-Inflatable			
MSRC Equipment Site					
Site Totals:		750 ft Boom			

### San Diego, CA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
RECON 2 Oil Spill Response Vessel (OSRV)		2,000 ft 18" Curtain Internal Foam			
Shallow Water Barge Shallow Water Barge (self propelled/400 bbl)	1 Stress III (9,043 bbl/day)			400 bbl Onboard Storage	
San Diego, CA Equipment Site MSRC Equipment Site	1 Desmi Terminator (3,017 bbl/day) 1 GT-185 Skimmer (with Adapter) (1,371 bbl/day) 1 Queensboro (905 bbl/day) 1 Walosep Mini (335 bbl/day)	120 ft 20" Curtain Internal Foam 7,500 ft 24" Curtain Internal Foam 1,950 ft 24" Tidal Seal		1 Shallow Water Barge (non-self propelled/400 bbl) (400 bbl) 1 Skim Sled (7 bbl) 3 3000 bbl Towable Storage Bladders (9,000 bbl) 2 500 bbl Towable Storage Bladders (1,000 bbl) 4 57 bbl Fastanks (228 bbl)	1 Shallow Water Push Boat (28' Munson)
Site Totals:	5 Skimmers (14,672 bbl/day)	11,570 ft Boom		11,035 bbl Storage	

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**Table C-3**  
**MSRC Aerial Tracking Assets**

City	State	COTP	Resource	Aircraft Type	Qty	Contractor
San Francisco	CA	San Francisco	Bell 407	Helo	one	San Francisco Helicopter
San Francisco	CA	San Francisco	Bell 206B	Helo	one	
Oakland	CA	San Francisco	King Air 200	Fixed Wing	one	Air Flight Services
San Jose	CA	San Francisco	Aero Commander 500	Fixed Wing	one	
San Jose	CA	San Francisco	Piper Navajo PA-31	Fixed Wing	one	
Los Alamitos	CA	San Francisco		Fixed Wing	six	Dynamic Aviation
Hayward	CA	San Francisco	Augusta 109	Helo	one	South Bay Helicopter
Hayward	CA	San Francisco	Eurocopter AS 350 (Astar)	Helo	one	Executive Air Charter
Eureka	CA	San Francisco	Piper Seneca	Fixed Wing	one	

**Table C-4 GROUP V OIL- DREDGE EQUIPMENT**

**(Page 1 of 2)**

<b>Vessel Type (name)</b>	<b>Dimensions</b>	<b>Capacity</b>
<b>Derrick Barges &amp; Heavy Lift</b>		
Super Scoop	70' wide X 176' long X 12' deep	120,000 lbs. whip; 9.5 to 24 CY buckets
Paula Lee	68' wide X 250' long X 15' deep	100,000 lbs max. whip; 4 to 15 CY buckets
Derrick Barge No. 3	40' wide X 140' long X 6.6' deep	70,000 lbs max; 5 CY dredge bucket
Derrick Barge No. 5	78' wide X 225' long X 15' deep	800,000 lbs max. stern mainfall
Derrick Barge No. 16	70' wide X 140' long X 12.5' deep	260,000 lbs max. mainfall at 25'
Derrick Barge No. 17	52' wide X 112' long X 9.1' deep	90,000 lbs max. revolving
Derrick Barge No. 24	55' wide X 150' long X 13' deep	238,000 lbs max. revolving; 6 to 9 CY buckets
Derrick Barge No. 25	55' wide X 150' long X 13' deep	150,000 lbs max.; 6 to 9 CY buckets
<b>Sidedraft &amp; Suction Dredges</b>		
Sacramento	53' wide X 105' long X 7.5' deep	3.25 to 6.5 CY Stockton clamshell buckets
Beaver	35' wide X 100' long X 7' deep	60' cutting depth; 18" suction, 16" discharge
Liberty	40' wide X 97.4' long X 8' deep	2.75 to 3 CY Stockton clamshell buckets
Headway	33' wide X 130' long X 5.7' deep	18" suction, 16" discharge
Alameda	32' wide X 77' long X 5.8' deep	1.75 to 3 CY Stockton clamshell buckets
Dana	32' wide X 110' long X 11' deep	16" suction, 14" discharge
<b>Barges &amp; Workboats</b>		
Trojan	17' wide X 55' long X 6' deep	
1060 & Pinto	14' wide X 50' long X 4.5' draft	
Joey & Steffi J.	11' wide X 31' long X 4.5' deep	
Castine	13.3' wide X 25.6' long X 5.6' deep	
Also available are various barges with capacities from 800 to 4,000 CY		

**CONTINUED**

<b>GROUP V OIL- DREDGE EQUIPMENT</b> <b>(Page 2 of2)</b>		
<b>Vessel Type (name)</b>	<b>Dimensions</b>	<b>Capacity</b>
<b>Land Equipment</b>		
•	Cranes with beams from 50' to 200'; 10 to 250 ton capacity, buckets up to 10 CY	
•	Loaders and dozers with capacity of up to 7.5 CY	
•	Excavators and marsh buggies with capacity of up to 3 CY	
•	Scrapers and motor graders with 14' to 16' blade widths	

## C.6 TEMPORARY OIL STORAGE CAPABILITY

Owner or Contractor	Description	Qty	Total Barrels
MSRC	Portable Tanks	Refer to equipment list	1,033
MSRC	Skimmers	Refer to equipment list	3,720
MSRC	Barge 452	1	45,000
MSRC	Temporary Storage Bladders	2	6,000
MSRC	Pacific Responder (OSRV)	1	4,000
Chevron	*Recovered Oil Tank-T 1504	1	15,000
	*Crude Oil Tank	1	475,000
	Total Temporary Oil Storage Available to Chevron:		549,753

\* The refinery uses T-1504 (a 30,000-bbl tank with typically 15,000 bbls available room) for recovered oil storage for reprocessing. It is used on an ongoing basis for containing oil from routine refinery operations. It will also be used to contain oil recovered from an oil spill as well. When more storage is required a crude tank will be emptied and made available to contain recovered oil. Crude tanks will hold between 475,000 barrels and 673,000 bbls of oil. The oil recovered from a spill will then be recycled as feed to the Crude Processing Unit.

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**E-1 PURPOSE**

The Site Safety and Health Plan (SSHP) provides the Safety Officer (SO) and ICS personnel a plan for safeguarding personnel during the initial emergency phase of the response and during on-going clean up operations. It is also intended to help meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation, Title 29 Code of Federal Regulations Part 1910.120.

**E-2 SCOPE**

All emergency responders assigned to the incident response are covered by the Site Safety and Health Plan.

**E-3 PREPARATION**

The on-scene Incident Commander (IC) or his/her designated staff starts the SSHP for an emergency response. Once assigned, the SO or his/her designee assumes responsibility for the plan. They will complete an ICS 208 along with Chevron SSHP forms in this Appendix. They will conduct an initial site characterization to address the hazards common to all operations involved in the response. For large incidents, the SSHP complements the Incident Action Plan. For smaller incidents, the SSHP complements the ICS-201.

**E-4 DISTRIBUTION**

The SSHP with appropriate attachments is forwarded to the Planning Section Chief (PSC) by the SO. For smaller incidents where a PSC is not assigned, the Safety Officer provides the plan directly to the IC/Unified Command. The Operations Section Chief, Deputies, and Division/Group Supervisors receive a copy of the plan. They must ensure it is available on site for all personnel to review. Copies are made and attached to Assignment List(s) (ICS-204s). If the entire Site Safety Plan is not attached to a 204, the sections of the plan applicable to that assignment and/or work area (e.g. specific hazards, PPE, weather and any supporting infrastructure such as field medical stations) must be emphasized in the form. The SO is responsible for ensuring that the SSHP properly addresses the hazards of the operation. The SO accomplishes this through on site enforcement and feedback to operational units.



# Emergency Response and Clean-Up Operation

## Chevron Site Safety and Health Plan

Operational Period Covered	Date	Time
From:		
To:		

### A. Site Characterization and Analysis - Description of Location: (If necessary attach Map)

Material(s) released \_\_\_\_\_ MSDS(s) \_\_\_\_\_

### B. Organizational Structure

Unified Command: Chevron: \_\_\_\_\_ FOSC: \_ OSPR: \_\_\_\_\_

Site Safety Representatives: \_\_\_\_\_

### C. Workplan (General description of clean-up activities, tasks, approximate work force, tools to be used, and special equipment required for the Operational Period)

### D. Safety and Health Hazards: Safety And Health Hazards which may be associated with the clean-up activities described above. (List Work Sites/Activities and Check off the Hazards that apply.)

	Work Site/ Activity (s)	Work Site/ Activity (s)	Work Site/ Activity (s)	Work Site/ Activity (s)	Work Site/ Activity (s)	Work Site/ Activity (s)
<b>Hazard:</b>						
Skin/eye Contact Hazard*						
Inhalation Hazard+						
Flammable / Explosion Hazard						
Heat stress/exhaustion or Hypothermia						
Weather Hazard (including winds or waves)						
Slips, Trips or Falls						

\* List Skin/Eye Contact Hazards: \_\_\_\_\_

+ Inhalation Hazards: \_\_\_\_\_

Other: \_\_\_\_\_

**E. HAZWOPER Training Requirements:**

Off-Shore	Shoreline Protection	Shoreline Cleanup (Contaminated)	Other:

**F. Pre-entry Briefing Requirements:** (As necessary to ensure workers are apprised of situation)

1. Review MSDS	2. Review PPE Requirements	3. Review Potential Hazards
4. Review Decon Procedures	5. Review Evacuation Procedures	6. Review Handling of Waste
7. Review Injury Reporting and Medical Emergency Procedures	8. Site Security Requirements	9.

**G. Personal Protective Equipment and Decontamination Required:** (Attachment No. 1)

- Note: Attach either the 3 page Standard PPE/Decon Plan or prepare a plan specifically for this incident. Specify on the PPE plan where each ensemble and decon procedure should be used.

**H. Monitoring Program:**

	Time Intervals	Work sites or Activities	Work sites or Activities	Work sites or Activities	Work sites or Activities	Work sites or Activities
<b>TYPE:</b>						
Flammability						
Benzene (Detector Tube)						
Benzene (Org. Vapor Badge)						
H <sub>2</sub> S						

- Medical Surveillance Required? If yes, specify requirements.

**J. Emergency Response:**

- Central Meeting Location \_\_\_\_\_
- Nearest Emergency Assistance Available and how to contact: \_\_\_\_\_
- Fire/Medical \_\_\_\_\_
- Transportation \_\_\_\_\_
- First Aid supplies available (location and type) \_\_\_\_\_

**K. Site Security Plan:**

**L. Risk Identification And Worker Notification:** This Site Safety and Health Plan summarizes the health and safety risks that may be encountered. It must be made available to workers before clean-up begins.

Site Safety Representative	Date/Time	Chevron Incident Commander	Date/Time
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**Attachments** (check those that apply): \_\_\_\_ Attachment 1 (PPE/Decon); \_\_\_\_ MSDS; \_\_\_\_ Map/Chart; \_\_\_\_\_; \_\_\_\_\_;

**Phone Contacts:** Incident Commander: \_\_\_\_\_; Site Safety Representative: \_\_\_\_\_; Off Shore: \_\_\_\_\_  
 Shoreline Protection: \_\_\_\_\_; Shoreline Cleanup: \_\_\_\_\_; Surveillance: \_\_\_\_\_  
 Environmental Branch: \_\_\_\_; \_\_\_\_\_

**Attachment 1 of Site Safety and Health Plan**

**Required Personal Protective Equipment:** Fill out the following information and requirements:

Spilled Material:	Respiratory Protection	Exposure-Light <sup>✓</sup>	Exposure-Medium <sup>✓</sup>	Exposure Heavy <sup>✓</sup>
		Ensemble #	Ensemble #	Ensemble #
		Ensemble #	Ensemble #	Ensemble #
		Ensemble #	Ensemble #	Ensemble #

**Ensemble # \_\_\_\_\_: (No exposure to Spilled Material)** Check the Appropriate items

Head & Eyes:	Feet:	Hands:	Body:	Respiratory:
Safety Glasses+	Rubber Boots	Cotton Gloves	Long Sleeves+	Half Mask
Goggles	Plastic Boots	Rubber Gloves	Nomex	Full Mask
Face Shield	Hip Waders	Neoprene Glove	Tyvek Coveralls	Supplied Air
Hard Hat++	Work Boots	Nitrile Gloves	Mud/Rain Suit	SCBA
	Tyvek BootCovers	PVC Gloves	Mud/Rain Btms	Cartr. Org. Vapor
	Rubber Overshoes	Inner Gloves	Tape Sleeves/Cuffs	Cartr. Org Vapor& Dust
		Leather Gloves	Life Jacket*	

**Ensemble # \_\_\_\_\_: (Light Exposure to Spilled Material)** Check the Appropriate items

Head & Eyes:	Feet:	Hands:	Body:	Respiratory:
Safety Glasses	Rubber Boots	Cotton Gloves	Long Sleeves	Half Mask
Goggles	Plastic Boots	Rubber Gloves	Nomex (1)	Full Mask
Face Shield	Hip Waders	Neoprene Glove	Tyvek Coveralls	Supplied Air
Hard Hat++	Work Boots	Nitrile Gloves	Mud/Rain Suit	SCBA
	Tyvek BootCovers	PVC Gloves	Mud/Rain Btms	Cartr. Org. Vapor
	Rubber Overshoes	Inner Gloves	Tape Sleeves/Cuffs	Cartr. Org Vapor& Dust
		Leather Gloves	Life Jacket*	

**Ensemble # \_\_\_\_\_: (Medium Exposure to Spilled Material)** Check the Appropriate items

Head & Eyes:	Feet:	Hands:	Body:	Respiratory:
Safety Glasses	Rubber Boots	Cotton Gloves	Long Sleeves	Half Mask
Goggles	Plastic Boots	Rubber Gloves	Nomex	Full Mask
Face Shield	Hip Waders	Neoprene Glove	Tyvek Coveralls	Supplied Air
Hard Hat++	Work Boots	Nitrile Gloves	Mud/Rain Suit	SCBA
	Tyvek BootCovers	PVC Gloves	Mud/Rain Btms	Cartr. Org. Vapor
	Rubber Overshoes	Inner Gloves	Tape Sleeves/Cuffs	Cartr. Org Vapor& Dust
		Leather Gloves	Life Jacket*	

**Ensemble # \_\_\_\_\_: (Heavy Exposure to Spilled Material)** Check the Appropriate items

Head & Eyes:	Feet:	Hands:	Body:	Respiratory:
Safety Glasses	Rubber Boots	Cotton Gloves	Long Sleeves	Half Mask
Goggles	Plastic Boots	Rubber Gloves	Nomex	Full Mask
Face Shield	Hip Waders	Neoprene Glove	Tyvek Coveralls	Supplied Air
Hard Hat++	Work Boots	Nitrile Gloves	Mud/Rain Suit	SCBA
	Tyvek BootCovers	PVC Gloves	Mud/Rain Btms	Cartr. Org. Vapor
	Rubber Overshoes	Inner Gloves	Tape Sleeves/Cuffs	Cartr. Org Vapor& Dust
		Leather Gloves	Life Jacket*	

Attachment No. 1; Page 1 of \_\_\_\_\_

General: (If any of the following notes do not apply cross them out.)

+ Though Safety Glasses, Hard Hats and Long Sleeves are required for all personnel assigned to a work area, Delivery or transient personnel (at the discretion of the site supervisor) may be allowed to perform their duties without this equipment.

++ Hard Hats are required where ever overhead work (lifting, working in a boat below the deck of another craft or dock, etc.) will be performed. Hard Hats will not be required while aboard a boat while it is on the open water.

\* Life Jackets are required aboard all vessels and whenever work is performed over water. They are also required whenever work is performed alongside water where a trip or fall could result in entering the water.

(1) Nomex or other fire retardant clothing is required whenever the potential of flash fire exists.

### Attachment 1 of Site Safety and Health Plan

#### Decontamination Procedures: (Fill in Decon Procedure Number and Decon Steps)

Activity:	Decon _____ (Light)	Decon _____ (Med)	Decon _____ (Hvy)
Leaving Hot Zone For Break			
Leaving Hot Zone at Shift's End.			

#### Definitions of Exposures: (Describe work sites or actions which fit the following definitions)

Exposure-None	Exposure-Light	Exposure-Medium	Exposure-Heavy
No expected contact with spilled material	Incidental contact with spilled material.	Exposure limited mainly to extremities (arms, legs, feet and hands).	1.Exposure could involve main torso & extremities or 2.Medium exposure where field conditions could reduce effectiveness of the PPE.
<b>Work Sites/Actions:</b>	<b>Work Sites/Actions:</b>	<b>Work Sites/Actions:</b>	<b>Work Sites/Actions:</b>

## Suggested Personal Protective Equipment for Oil Spill Response

(Can be used as Attachment 1 for the Site Safety and Health Plan)

<b>Material</b>	<b>Respiratory Protection</b>	<b>Exposure-Light</b>	<b>Exposure-Medium</b>	<b>Exposure Heavy</b>
<b>Gasoil, VGO, FCC Feed Gas Oil, Low Sulfur Waxy Resid, 6 fuel, Medium cycle Oil, Heavy Cycle Oil, Lube Oils</b>	None typically required; Enclosed areas should be checked for flammable atmospheres.	PPE Ensemble # 1 Decon A	PPE Ensemble #2 Decon B	PPE Ensemble #3 Decon C
<b>Crude</b>	None typically required (though H2S and Benzene should be checked to ensure exposures < OSHA limits) Will generate explosive or flammable atmospheres in enclosed area.	PPE Ensemble # 1 Decon A	PPE Ensemble #2 Decon B	PPE Ensemble #3 Decon C
<b>Light Cycle Oil</b>	None typically required; Enclosed areas should be checked for flammable atmospheres.	PPE Ensemble #2 (skin exposure should be avoided) Decon B	PPE Ensemble #3 (skin exposure should be avoided) Decon B	PPE Ensemble #3 (skin exposure should be avoided) Decon C
<b>Finished Gasolines, gasoline components, naphthas</b> (Use sorbents for initial containment. Do not boom spill or operate equipment in the spill area until the volatile components have weathered off)	Respiratory protection will be required in enclosed areas. Explosive atmospheres will also be present. Benzene Monitoring should be initiated immediately so that appropriate respiratory protection is established.	PPE Ensemble # 1 Decon A	PPE Ensemble #2 Decon B	PPE Ensemble #3 Decon C
<b>Diesel</b>	None typically required; Enclosed areas should be checked for flammable atmospheres.	PPE Ensemble # 1 Decon: A	PPE Ensemble #2 Decon B	PPE Ensemble #3 Decon C
<b>Jet</b> (Use sorbents for initial containment. Do not boom spill or operate equipment in the spill area until the volatile components have weathered off)	None typically required; Enclosed areas should be assumed to have flammable atmospheres.	PPE Ensemble # 1 Decon: A	PPE Ensemble #2 Decon B	PPE Ensemble #3 Decon C
<b>Chemicals (MTBE, ETBE, Methanol,...</b> Spills of these materials should be addressed at the time of the spill.				

Recommended Attachment No. 1; Page 1 of 3

## Personal Protective Equipment-Recommended Ensembles

Can be used as Attachment 1 of Site Safety and Health Plan

### **Ensemble #0** (Recommended where no exposure to the spilled material is expected)

Head & Eyes:		Feet:		Hands:		Body:		Respiratory:	
Safety Glasses+	x	Rubber Boots		Cotton Gloves		Long Sleeves+	x	Half Mask	
Goggles		Plastic Boots		Rubber Gloves		Nomex		Full Mask	
Face Shield		Hip Waders		Neoprene Glove		Tyvek Coveralls		Supplied Air	
Hard Hat++	x	Work Boots		Nitrile Gloves		Mud/Rain Suit		SCBA	
		Tyvek BootCovers		PVC Gloves		Mud/Rain Btms		Cartr. Org. Vapor	
		Rubber Overshoes		Inner Gloves		Tape Sleeves/Cuffs		Cartr. Org Vapor& Dust	
				Leather Gloves		Life Jacket*	x		

### **Ensemble #1** (Recommended where light exposure to the spilled material is expected)

Head & Eyes:		Feet:		Hands:		Body:		Respiratory:	
Safety Glasses	x	Rubber Boots		Cotton Gloves		Long Sleeves	x	Half Mask	
Goggles		Plastic Boots		Rubber Gloves		Nomex (1)	x	Full Mask	
Face Shield		Hip Waders		Neoprene Glove		Tyvek Coveralls		Supplied Air	
Hard Hat++	x	Work Boots	x	Nitrile Gloves		Mud/Rain Suit		SCBA	
		Tyvek BootCovers		PVC Gloves		Mud/Rain Btms		Cartr. Org. Vapor	
		Rubber Overshoes		Inner Gloves		Tape Sleeves/Cuffs		Cartr. Org Vapor& Dust	
				Leather Gloves	x	Life Jacket*	x		

### **Ensemble #2** (Recommended where medium exposure to the spilled material is expected)

Head & Eyes:		Feet:		Hands:		Body:		Respiratory:	
Safety Glasses	x	Rubber Boots		Cotton Gloves		Long Sleeves		Half Mask	
Goggles		Plastic Boots		Rubber Gloves	x	Nomex		Full Mask	
Face Shield		Hip Waders		Neoprene Glove		Tyvek Coveralls	x	Supplied Air	
Hard Hat++	x	Work Boots		Nitrile Gloves		Mud/Rain Suit		SCBA	
		Tyvek BootCovers		PVC Gloves		Mud/Rain Btms		Cartr. Org. Vapor	
		Rubber Overshoes	x	Inner Gloves		Tape Sleeves/Cuffs		Cartr. Org Vapor& Dust	
				Leather Gloves		Life Jacket*	x		

### **Ensemble #3** (Recommended where heavy exposure to the spilled material is expected)

Head & Eyes:		Feet:		Hands:		Body:		Respiratory:	
Safety Glasses	x	Rubber Boots	x	Cotton Gloves		Long Sleeves		Half Mask	
Goggles		Plastic Boots		Rubber Gloves	x	Nomex		Full Mask	
Face Shield		Hip Waders		Neoprene Glove		Tyvek Coveralls	x	Supplied Air	
Hard Hat++	x	Work Boots		Nitrile Gloves		Mud/Rain Suit		SCBA	
		Tyvek BootCovers		PVC Gloves		Mud/Rain Btms	x	Cartr. Org. Vapor	
		Rubber Overshoes		Inner Gloves		Tape Sleeves/Cuffs		Cartr. Org Vapor& Dust	
				Leather Gloves		Life Jacket*	x		

#### **General Notes:**

+ Though Safety Glasses, Hard Hats and Long Sleeves are required for all personnel assigned to a work area, Delivery or transient personnel (at the discretion of the site supervisor) may be allowed to perform their duties without this equipment.

++ Hard Hats are required where ever overhead work (lifting, working in a boat below the deck of another craft or dock, etc.) will be performed. Hard Hats will not be required while aboard a boat while it is on the open water.

\* Life Jackets are required aboard all vessels and whenever work is performed over water. They are also required whenever work is performed alongside water where a trip or fall could result in entering the water.

(1) Nomex or other fire retardant clothing is required whenever the potential of flash fire exists.

- The requirements summarized above should be considered the minimum safety equipment required. Every oil spill is different and the requirements for personal protective equipment can vary based on conditions. In addition the availability of Personal Protective Equipment could result in the substitution of gear with a higher protection rating. The choice of respiratory protection equipment (if any) will also be determined at the time of the incident based on the material spilled, exposure, conditions etc.

**Recommended Attachment No. 1; Page 2 of 3**

### Suggested Decontamination Procedures

(Can be used as Attachment 1 for the Site Safety and Health Plan)

Activity:	Decon A	Decon B	Decon C
<b>Leaving Hot Zone for break</b>	Leave Equipment in “Hot” Zone	Leave Equipment in “Hot” Zone	Leave Equipment in “Hot” Zone
	Remove oil from boots using sorbents (to prevent tracking)	Remove outer clothing and leave in “Warm” Zone	Remove outer clothing and leave in “Warm” Zone
	Leave Gloves and coveralls (if worn) in the “Warm” Zone	Outer Boot and Glove Wash	Boot, glove and clothing wash
	Hand and face wash	Hand and face wash	Hand and face wash
<b>Leaving Hot Zone at Shift’s End.</b>	Wash Equipment to remove oil or bag for off site decon.	Wash Equipment to remove oil or bag for off site decon.	Wash Equipment to remove oil or bag for off site decon.
	Remove oil from boots using sorbents (to prevent tracking)	Outer Boot and Glove Wash	Boot, glove and clothing wash
	Dispose of gloves and other debris as directed by the Hazardous Waste Unit	Dispose of Tyvek Coveralls and other debris as directed by the Hazardous Waste Unit	Dispose of Tyvek Coveralls and other debris as directed by the Hazardous Waste Unit
	Hand and face wash	Hand and face wash	Hand and face wash

The above recommended decontamination procedures should be considered the minimum requirements for each situation. Every oil spill is different and more rigorous decontamination procedures may be required. The Site Safety Representative or Incident Commander should review these procedures at the time of the spill to ensure their adequacy.

### Suggested Definitions and Examples of Exposures

Exposure-None	Exposure-Light	Exposure-Medium	Exposure-Heavy
No expected contact with spilled material	Incidental contact with spilled material.	Exposure limited mainly to extremities (arms, legs, feet and hands).	1.Exposure to spilled material could involve main torso as well as extremities or 2.Medium exposure where abrasion or other conditions could reduce the effectiveness of the PPE.
Examples	Examples	Examples	Examples
Personnel involved in spill response activities before the arrival of the spilled material (such as shoreline protection, beach precleaning, etc)	Initial Boom Deployment where personnel may have some contact with spilled material	Retrieving soiled sorbents, boom or equipment such that primarily arms and legs are exposed to spilled materials.	Retrieving heavily soiled sorbents, boom, equipment such that much of body could be exposed to spilled material
Operators of boats, trucks, cranes, or other equipment where a person is protected by a cab.	Deploying pads from a clean area into the spill zone	Light duty shoreline cleanup	Shoreline cleanup involving heavy concentrations or pooled materials
Support personnel outside of the Hot Zone (Deliverers of equipment, materials and supplies, security, staging, etc.)	Handlers of bagged, soiled materials.	Skimmer operator	Washing rocks in the tidal zone
Supervisors not entering the Hot Zone	Supervisors entering the Hot Zone	Vacuum Truck operator	Bird or wildlife rescue

Recommended Attachment No. 1; Page 3 of 3

**APPENDIX F**

**LIST OF ACRONYMS AND ABBREVIATIONS**



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**LIST OF ACRONYMS AND ABBREVIATIONS**


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ACP -----	Area Contingency Plan
ANS -----	Alaska North Slope crude oil
AMPD -----	Average Most Probable Discharge
ANSI -----	American National Standards Institute
B&S -----	Blending and Shipping Division
bbl -----	42 gallon Barrel
BFO -----	Bunker Fuel Oil
CDFG -----	California Department of Fish and Game
CFR -----	Code of Federal Regulations
CFRE -----	Chevron Field Representative Environmental
COTP -----	US Coast Guard Captain of the Port
CTD -----	Communications Technology Department
CUSA -----	Chevron U.S.A.
CWA -----	Clean Water Act
DCMA -----	Double Counterweighted Marine Arm
DFG -----	Department of Fish and Game
DOC -----	Department of Commerce
DOI -----	Department of Interior
DOT -----	Department of Transportation
dwt -----	Dead weight ton
EA -----	Environmental Affairs group within the refinery
EOD -----	Environmental Operations Division
EPA -----	United States Environmental Protection Agency
ESD -----	Emergency Services Division (w/i the refinery)
ESRT -----	Emergency Spill Response Team
FOLR -----	Fuel Oil Loading Rack
FOSC -----	Federal On-Scene Coordinator
FWPCA -----	Federal Water Pollution Control Act
FWS -----	Fish and Wildlife Service
GD -----	OSPR Guidance Document (for Facility and Vessel Plans)
HAZOP -----	Hazard and Operability Study
HAZWOPER -----	Hazardous Waste Operations and Emergency Response
HCS -----	Hazard Communication Standard
HEPA -----	High Efficiency Particulate Air
HO -----	Head Operator
HOS -----	Hazards and Operability Study
HSFO -----	High Sulfur Fuel Oil
HWM -----	Hazardous Waste Manifest
IBF -----	Intermediate Bunker Fuel Oil
IBRRC -----	International Bird Rescue Research Center
IC -----	Incident Commander
ICS -----	Incident Command System
LPG -----	Liquefied Petroleum Gases
MID -----	Material Information Data Sheet
MMPD -----	Maximum Most Probable Discharge
MSDS -----	Material Safety Data Sheet
MSRC -----	Marine Spill Response Corporation
MTR -----	Marine Transportation Related Facility

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**LIST OF ACRONYMS AND ABBREVIATIONS**


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NCP -----	National Oil and Hazardous Substance Pollution Contingency Plan
NMFS -----	National Marine Fisheries Service
NOAA -----	National Oceanographic and Atmospheric Administration
NRC -----	National Response Center
NRC	National Response Corporation
NRDA -----	Natural Resource Damage Assessment
NRT -----	National Response Team
OM -----	Long Wharf Operations Manual
OPA 90 -----	Oil Pollution Act of 1990
ORT -----	Onsite Response Team
OSC -----	On-Scene Coordinator
OSHA -----	Occupational Safety and Health Administration
OSRC	Oil Spill Response Center (Richmond Long Wharf)
OSPR -----	Office of Oil Spill Prevention and Response
OSRO -----	Oil Spill Response Organization
OSRT	Oil Spill Response Team
OSRV -----	Oil Spill Response Vessel
OWCN	Oiled Wildlife Care Network
OWOCRS -----	Open Water Oil Containment Recovery System
PFD -----	Personal Flotation Devices
PPE -----	Personal Protective Equipment
ppm -----	Parts per million
PREP -----	Preparedness Response Exercise Program (National)
PSM -----	Process Safety Management
PST -----	Pacific Standard Time
PVA -----	Polyvinyl Alcohol
PVC -----	Polyvinyl Chloride
QI -----	Qualified Individual
RCRA -----	Resource Conservation and Recovery Act
RLW -----	Richmond Long Wharf
RM -----	Response Manual
RMC -----	Refinery Maintenance Coordinator
RP -----	Responsible Party
RRM -----	Clean Bay Regional Resource Manual
RRT -----	Regional Response Team
RSL -----	Refinery Shift Leader
SARA -----	Superfund Amendments and Reauthorization Act
SCAT -----	Shoreline Cleanup Assessment Team
SCBA -----	Self-Contained Breathing Apparatus
SMT	Spill Management Team
SOSC -----	State On-Scene Coordinator
SPCC -----	Spill Prevention Control and Countermeasure Plan
SPERP	Spill Preparedness and Emergency Response Plan (Chevron Refinery)
SRP -----	Spill Response Plan
SRT -----	Refinery Spill Response Team
SRU -----	Sulfur Recovery Unit
SUPSALV -----	U.S. Navy Supervisor of Salvage
TSDF -----	Treatment, Storage, and Disposal Facility

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**LIST OF ACRONYMS AND ABBREVIATIONS**

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TTLR-----	Tank Truck Loading Rack
TWA -----	Time Weighted Average
UCS -----	Unified Command System
USC -----	United States Code
USCG-----	United States Coast Guard
VGO-----	Vacuum Gas Oil
VOSS -----	Vessels of Opportunity Skimming Systems
WCD -----	Worst Case Discharge
WOM -----	Long Wharf Operations Manual
WOW -----	Wildlife on Wheels
WWERT	World-Wide Emergency Response Team (Chevron Corp)

**Appendix J**

**LISTING OF QUALIFIED INDIVIDUALS**

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Appendix J Contents

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- BATTALION CHIEFS AS QUALIFIED INDIVIDUALS .....J-3
- ON-CALL INCIDENT COMMANDERS AS QUALIFIED INDIVIDUALS .....J-3

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**List of Qualified Individuals for the Richmond Refinery**

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**BATTALION CHIEFS AS QUALIFIED INDIVIDUALS**

Mario Ferrer  
Keith White  
Martin Sylva  
Grant Tokiwa  
Scott Joseph  
Mark Jelonek

Acting Battalion Chiefs designated by the Chevron Fire Chief or Manger, Emergency Services Division

**INCIDENT COMMANDERS (IC) ON-CALL AS QUALIFIED INDIVIDUALS**

Mark Ayers  
Dan Tydingco  
Greg Bosworth  
Richard Sylvia  
Robert Kendall  
Jack Silva  
Matt Johnson